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December 1, 2022

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 Associate of Applied Science in Fire Science Technology. This new degree program has been recommended through the college curriculum committee and approved by the President and Board of Trustees.

Check number 0266272 was mailed on November 28, 2022, with a letter and summary of the changes requested for Wor-Wic Community College. This letter, corresponding coversheet and new program proposal are being sent electronically.

Please contact me should you have any questions and/or need further information. Thank you for your time and consideration.

Sincerely,



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

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**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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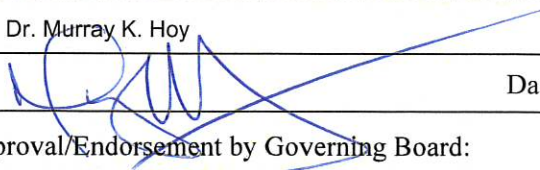
*Each action below requires a separate proposal and cover sheet.*

- |   |   |
|---|---|
| <input checked="" type="radio"/> New Academic Program | <input type="radio"/> Substantial Change to a Degree Program            |
| <input type="radio"/> New Area of Concentration       | <input type="radio"/> Substantial Change to an Area of Concentration    |
| <input type="radio"/> New Degree Level Approval       | <input type="radio"/> Substantial Change to a Certificate Program       |
| <input type="radio"/> New Stand-Alone Certificate     | <input type="radio"/> Cooperative Degree Program                        |
| <input type="radio"/> Off Campus Program              | <input type="radio"/> Offer Program at Regional Higher Education Center |

Payment <input checked="" type="radio"/> Yes	Payment <input type="radio"/> R*STARS # 0266272	Payment	Date
Submitted: <input type="radio"/> No	Type: <input checked="" type="radio"/> Check # 0266272	Amount: \$850	Submitted: 12/01/2022

Department Proposing Program	Emergency Medical Services		
Degree Level and Degree Type	Associate of Applied Science Degree		
Title of Proposed Program	Fire Science Technology		
Total Number of Credits	60		
Suggested Codes	HEGIS: 5507.01	CIP: 43.0203	
Program Modality	<input checked="" type="radio"/> On-campus	<input type="radio"/> Distance Education ( <i>fully online</i> )	
Program Resources	<input checked="" type="radio"/> Using Existing Resources	<input type="radio"/> Requiring New Resources	
Projected Implementation Date	<input checked="" type="radio"/> Fall	<input type="radio"/> Spring	<input type="radio"/> Summer Year: 2023
Provide Link to Most Recent Academic Catalog	URL: <a href="https://catalog.worwic.edu/">https://catalog.worwic.edu/</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: 12/01/2022
	Date of Approval/Endorsement by Governing Board:	12/01/2022

Revised 1/2021

**Fire Science Technology, A.A.S. Degree – Wor-Wic Community College  
Substantial Curriculum Change Application**

**A. Centrality to Institutional Mission and Planning Priorities:**

**A.1. Program Description:**

The Fire Science Technology Associate of Applied Science Degree program is offered in conjunction with the Maryland Fire and Rescue Institute (MFRI). Students will earn up to twenty academic credits for firefighter certification training courses offered through MFRI. Combined with other general education and emergency medical services course completion, this program will enhance students' abilities to be promoted in the emergency services field or to gain employment in the fire service. The Fire Science Technology Program follows the mission of the college by offering professional training and to provide workforce professional development in the emergency services field. Students will take these courses to improve their promotional opportunities in the emergency services field or to pave a path for a candidate to become employed in the field. This adheres to the College's mission to improve the quality of life on the Lower Eastern Shore.

Developing a Fire Science Technology degree program will address a current gap in awarding credit for prior learning for acquired professional experiences in the EMS profession. If approved, the Fire Science Technology program will be the first program of its kind in the Wor-Wic tri-county service area and region and the first program to accept credit for prior learning in the health professions division of Wor-Wic Community College.

The college mission aligns with goals and proposed program outcomes associated with the Fire Science Technology program. As the recently updated college mission states, "Wor-Wic Community College empowers a diverse population of students to achieve success by delivery high-quality, affordable education, professional training, workforce development opportunities, and comprehensive student services that strengthen economic growth and improve the quality of life on the Lower Eastern Shore." The Fire Science Technology program incorporates the transfer of credits for prior learning and facilitates workforce development opportunities in the fire service. Students are provided access to an affordable education, awarding college credit for professional training earned in the fire industry. To this end, the Fire Science Technology program emulates the three primary goals for postsecondary education, including access to college education, student success through degree completion, and innovation by creating new degree pathways to support employment needs of community stakeholders.

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

The Fire Science Technology Degree Program supports Wor-Wic Community College's Strategic Priority 1: Develop and implement enrollment, retention, and completion strategies to support student and community needs. There is a well-known deficit of

emergency services first responders in our local region, the State of Maryland, and the entire country. With the proposed program offering credits for experiential learning from the credits taken at the Maryland Fire and Rescue Institute, students will have an established path to degree completion, addressing the employment and promotion needs for emergency services personnel in the area. The courses in the program are relevant to the emergency services field, as all core courses are required courses for the path to promotion for our employers within the college tri-county area and region. Core MFRI courses are offered throughout the state, adapting to the schedule of the working EMS professional. Additionally, Wor-Wic's general education courses are available in a variety of instructional formats, offered in all college semesters, with on-campus, hybrid, and online flexible scheduling options. Education may be accessed according to student preference facilitating student success and degree completion.

The Fire Science Technology program aligns with Wor-Wic Community College Strategic Priority 3: Increase student success by expanding support services, delivering relevant courses and programs, and providing flexible scheduling. Wor-Wic has a commitment to its students to provide course offerings that support the community needs, as previously outlined in this proposal by removing barriers to access education and degree completion. General education courses are a majority of the program and will be offered for the indefinite future since most are required for completion of other programs offered at the college. The Maryland Fire and Rescue Institute was created in 1975 offering state funded educational programs for emergency services workers. The Fire Science Technology core courses are currently taught by the Institute. With MHEC approval, Wor-Wic will expand its academic programming by providing credit articulation for prior learning from courses completed at MFRI. Therefore, the Fire Science Technology program expands existing degree offerings to better provide for the educational needs of college community stakeholders.

### **A.3. Financial support for Fire Science Technology degree program implementation:**

Core Fire Science Technology courses are offered through the Maryland Fire and Rescue Institute. With program approval, the college will award credit for successful completion of these courses, resulting in no new costs to the college for the core courses. The remaining Fire Science Technology program curricula are general education courses that are requirements for other degree programs offered at the college. Those courses are consistently offered in all academic semesters. Since credit for prior learning is awarded for MFRI courses, the college may expedite student degree completion without procuring program specific operational costs. No new expenses are identified with Fire Science Technology program implementation.

Through already established partnerships with local and regional Fire departments, Fire Science Technology is a sustainable program meeting the needs of college stakeholders. Fire Chiefs and EMS leadership have endorsed program development, reviewed the MFRI credits for prior learning, and support the degree to satisfy requirements for promotion. There are no additional operational costs to the college for offering the

program. EMS course electives are instructed by qualified faculty, well respected in the EMS community.

#### **A.4. Institution's commitment to proposed Fire Science Technology degree program:**

Wor-Wic Community College is committed to the development and full implementation of the Fire Science Technology degree program. The objectives of the Fire Science Technology program support the college mission and goals. Wor-Wic outlines specific goals related to the four strategic priorities. The Fire Science Technology program aligns with the following college goals associated with strategic priorities 1 and 3.

Strategic Priority 1, Goal 1: Increase new student enrollment. Implementing the Fire Science Technology degree program provides an educational pathway for EMT/Firefighters currently not provided with educational offerings at the college or on the Eastern Shore of Maryland.

Strategic Priority 1, Goal 3: Increase overall degree completion. The Fire Science Technology program is designed to expedite the path to degree completion by accepting credits for prior learning in the EMS profession and awarding college credits for MFRI course completion.

Strategic Priority 3, Goal 2: Evaluate the relevancy of all academic program and course offerings. There is a critical shortage of EMS professionals nationally and within the college service area. Providing a degree for EMS professionals is a recruitment and retainment opportunity for community EMS stakeholders.

Strategic Priority 3, Goal 3: Develop flexible scheduling options in support of recruitment and retention efforts. EMS professionals work rotating 24-hour or 12-hour shifts, requiring flexible options to complete college degrees. Incorporating credit for prior learning with general education course credits at Wor-Wic, EMS professionals may complete the Fire Science Technology degree by taking these courses in a variety of instructional formats, adapting to the needs of EMS providers.

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

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

The Maryland Department of Labor predicts an increase of 16.25% in first line supervisors of firefighting and prevention workers from 2020 – 2030. When discussing the program with local employers, the core courses selected in the curriculum are those required for promotion in their respective organizations. This demonstrates how the Fire Science Technology degree program supports the need for the advancement and evolution of knowledge within the EMS community.

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

The Fire Science Technology program reinforces the Maryland State Plan for Postsecondary Education by aligning with multiple state goals and priorities. With acceptance of this degree program, *Student Access* is ensured by awarding credit for prior learning. This facilitates affordable education for EMS professionals (MD State Plan Goal 1, Priority 1). Additionally, development of the Fire Science Technology curriculum resulted from an analysis of systems in the EMS industry that impact the ability of qualified EMS professionals to seek and obtain promotion opportunities through completion of college credits (MD State Plan Goal 1, Priority 4).

As identified in the college mission and strategic plan, *Student Success* is the focal point for all academic and operational initiatives at Wor-Wic Community College. The Fire Science Technology program promotes student success by “delivering high-quality, affordable education” to the EMS community via a specific pathway to expedite degree completion (MD State Plan Goal 2, Priority 5, Priority 6). Since an EMS certificate provides entry into the fire service industry, earning a college degree as part of the fire officer promotion plan provides the “platform for ongoing lifelong learning” (MD State Plan Goal 2, Priority 7).

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

The proposed program targets both entry level firefighters as well as those currently employed who need additional education for promotional advancement. This program will also provide a path for students enrolled in high school CTE firefighter programs to continue their education in college. As such, the Fire Science Technology program aligns with “The Blueprint for Maryland’s Future Act”, the College and Career Readiness initiative.

Occ Code	Occupational Title	Occupation level	Employment				Separations		Total
			2020	2030	Change	Pct. Chg	Exits	Transfers	
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	4	1,606	1,867	261	16.3%	413	699	1,373
33-2000	Fire Fighting and Prevention Workers	3	5,081	5,886	805	15.8%	1,273	2,825	4,903
33-2011	Firefighters	4	4,886	5,653	767	15.7%	1,162	2,720	4,649

<https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>

The above chart provided by the Maryland Department of Labor illustrates job growth in the occupations of firefighters, firefighting, and prevention workers and first-line supervisors of firefighting and prevention workers during the 2020–2030-time frame. This program will offer a degree path that will increase students’ eligibility for promotion at their place of employment.

The Salisbury fire department employs 64 firefighter EMT or Paramedics. All of which could enroll in this program to work towards promotion. Our other major employer, the Town of Ocean City Fire Department employs 44 firefighter EMT and Paramedics who could enroll in this program to enhance promotional opportunities.

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

Fire Science Technology associate degree programs are offered at two other community colleges in Maryland including Cecil College and the College of Southern Maryland. Due to Wor-Wic Community College's geographic location, the proposed Fire Science Technology program does not ensue competition with peer community colleges offering this degree pathway. Cecil College is the only other Fire Science Technology program available on the eastern shore of Maryland, which is 120 miles north of the Wor-Wic Community College campus.

Similar programs in the state of Maryland include Fire Management at Anne Arundel Community College, Fire Service Administration at Frederick Community College, Fire Science and Leadership at Howard Community College and Fire Protection Technology offered at Montgomery College. These programs have different assessment outcomes, course sequences, and curricula than the proposed Fire Science Technology program at Wor-Wic Community College. As such, there is in fact reasonableness for program duplication because of the diversified program offerings throughout the state and Wor-Wic enrollment will not infringe upon the viability of Fire Science Technology programs provided at other colleges.

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

The following historically black institutions in Maryland do not offer Fire Science Technology education: Bowie State University, Coppin State University, Morgan State University, and University of Maryland Eastern Shore. The Wor-Wic Community College Fire Science Technology program will not compete with any of the colleges identified above because this degree is not currently offered at these institutions and will not negatively impact the operations of any of the state historically black institutions.

Wor-Wic works collaboratively with the University of Maryland Eastern Shore (UMES) and has established a transfer agreement for Wor-Wic students to earn scholarships towards Baccalaureate programs offered at UMES. Wor-Wic is a partner with UMES to provide affordable, quality education on the Delmarva peninsula.

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

Wor-Wic Community College serves a diverse student population seeking career advancement and training in health care professions. The Fire Science Technology program is an occupationally defined discipline and does not lend itself to specific degree programs offered at four-year universities. Implementation of the Fire Science Technology program will not have a negative impact on the operations of historically black institutions as this program is not available as a degree pathway at these colleges or universities.

## **G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes:**

### **G.1. Establishment of Proposed Fire Science Technology Program Oversight**

The Wor-Wic Community College EMS department was approached by the community stakeholders with interest requesting a fire science program. Meetings were conducted between Wor-Wic Community College, Ocean City Emergency Services, Ocean City fire marshal's office and Salisbury Fire Department. Discussions were held regarding a curriculum and which MFRI courses would be used for the degree program. This program will be housed within the Emergency Medical Services program and overseen by the department chair of the program. Advisement, including degree path, financial aid resources and graduation requirements, will be conducted by the advising center and student services division of the college in collaboration with emergency medical services faculty. The college will provide marketing for the program with its advertising of current program offerings.

## **G.2. Educational Objectives and Student Learning Outcomes, Program Assessment**

Fire Science Technology learning outcomes and educational objectives:

1. Differentiate the roles and responsibilities of the Emergency Management team.
2. Explain the career levels and promotional pathways available in the Fire Service.
3. Understand leadership concepts applied in the Fire Service.
4. Apply professional safety standards to the work environment.
5. Demonstrate effective written and oral communication skills.
6. Recognize ethical issues in a variety of settings and consider the consequences of alternative actions.

Assessment of achieved student learning outcomes will be conducted annually by the department chair of emergency medical services. The department chair will evaluate outcomes, analyze student performance data, develop action plans as needed and monitor student progress towards degree attainment.

## **G.3. Fire Science Technology Program Courses**

The following is the Fire Science Technology associate of applied science degree program curriculum, including Wor-Wic general education requirements and core Fire Science courses completed at MFRI:

Fall Semester – First Year of Enrollment

ENG 101	Fundamentals of English I	3 credits*
SDV 100	Fundamentals of College Study	1 credit
SOC 101	Introduction to Sociology	3 credits
GEN ED	Mathematics Requirement	3-4 credits*
GEN ED	General Elective	3 credits

**Total 13-14 credits**



Spring Semester – First Year of Enrollment

ENG 151	Fundamentals of English II	3 credits*
PSY 101	Introduction to Psychology	3 credits
PHE 106	Integrated Health and Fitness	3 credits
GEN ED	General Education Lab Science Requirement	4 credits
		<b>Total 13 credits</b>

Fall Semester – Second Year of Enrollment

COM 101	Introduction to Public Speaking or	
COM 200	Interpersonal Communications	3 credits
GEN ED	Elective	3 credits
EMS 101	Emergency Medical Technician I	4 credits
EMS 151	Emergency Medical Technician II	4 credits
		<b>Total 14 credits</b>

Required Occupational Courses Offered by Maryland Fire and Rescue Institute:

•	FIRE 101 Firefighter I	3 credits
•	FIRE 113 Pumping Apparatus Driver/Operator	1 credit
•	FIRE 114 Aerial Apparatus Diver/Operator	1 credit
•	FIRE 130 Emergency Vehicle Operator	1 credit
•	FIRE 201 Firefighter II	3 credits
•	FIRE 202 Truck Company Fire Ground Operations	1 credit
•	MGMT 201 Fire Officer I	4 credits
•	HM 102 Hazardous Materials Operations	1 credit
•	MGMT 110 Instructor I	2 credits
•	MGMT 204 Fire Inspector I	2 credits
•	RES 101 Rescue Technician – Site Operations	1 credit
		<b>Total 20 credits</b>
		<b>Degree Total 60- 61 credits</b>

## Maryland Fire and Rescue Institute (MFRI) Course Descriptions

### **FIRE 101 Firefighter I**

**3 credits**

Course Code: FIRE 101 Course Length: 135 Hours Prerequisite(s): There are no prerequisites for this course. Course Description: Major topics covered in this course are the fire department organization; communications; the incident command system; ropes and knots; fire behavior; safety; fire prevention; personal protective equipment; fire extinguishers; respiratory protection; ventilation; hoselines; forcible entry; search and rescue procedures; and ladder and sprinkler systems. Methods of instruction include lecture, discussion, and team-focused practical exercises.

### **FIRE 113 Pumping Apparatus Driver/Operator**

**1 credit**

Course Code: FIRE 113 Course Length: 39 Hours Prerequisite(s): There are no prerequisites for this course. MFRI Firefighter I (FIRE 101) or MFSPQB, NBFSPQ, or IFSAC Firefighter I certification is strongly encouraged. Course Description: Major topics covered in this course are basic terminology; water supply; water pressure and gauges; hydraulics; positive displacement props; centrifugal pumps; pump power supply systems; relief valves; pressure governors; primers; water sources; and maintenance. Methods of instruction include lecture, discussion, and team-focused practical exercises.

### **FIRE 114 Aerial Apparatus Diver/Operator**

**1 credit**

Course Code: FIRE 114 Course Length: 27 Hours Prerequisite(s): MFRI Firefighter I (FIRE 101) or MFSPQB, NBFSPQ, or IFSAC Firefighter I certification Course Description: Major topics covered in this course are truck company operations; tool requirements; terminology; techniques of spotting; stabilizing; working angles; loading; extreme operating conditions; raising and lowering; controls and valves; hydraulic systems; water tower operations; standpipe operations; ladders; safety rules; maintenance; and testing. Methods of instruction include lecture, discussion, and team-focused practical exercises.

### **FIRE 130 Emergency Vehicle Operator**

**1 credit**

Course Code: FIRE 130 Course Length: 21 Hours Prerequisite(s): Students must have a valid Maryland driver's license or equivalent and a letter from the chief of the department giving the student permission to drive the department's apparatus. Course Description: Major topics covered in this course are safe driving and collision avoidance; Maryland motor vehicle statutes; route selection and communications; vehicle inspection and driving preparation; physical forces affecting driving; lights and sirens; basic control tasks; urban driving; negotiating intersections and turnarounds; following and passing vehicles; high-speed driving; dealing with adverse conditions and contingencies; and emergency parking. Methods of instruction include lecture, discussion, and practical skills exercises.

### **FIRE 201 Firefighter II**

**3 credits**

Course Code: FIRE 201 Course Length: 66 Hours Prerequisite(s): MFRI Firefighter I (FIRE 101) or MFSPQB, NBFSPQ, or IFSAC Firefighter I certification. A minimum of one year of experience as a Firefighter I is suggested before enrolling. Course Description: Major topics covered in this course are incident command; building construction; ventilation; water distribution; hose streams; fixed fire protection systems; fire prevention; inspection preplanning; ladders; and rescue procedures.

**FIRE 202 Truck Company Fire Ground Operations****1 credit**

Course Code: FIRE 202 Course Length: 24 Hours Prerequisite(s): MFRI Basic Fire, Essentials of Firefighting IV, Firefighter I (FIRE 101), or equivalent Course Description: Major topics covered in this course are the function and responsibilities of the truck company; forced entry; ground ladder use; techniques and procedures for locating victims; techniques for removal of smoke and gases; salvage operations; checking for fire extension; procedures for overhauling; building construction; utility control; and electrical and lighting the fireground. Methods of instruction include lecture, discussion, and team-focused practical exercises.

**MGMT 201 Fire Officer I****4 credits**

Course Code: MGMT 201 Course Length: 60 Hours Prerequisite(s): MFRI Firefighter II (FIRE 201) or MFSPQB, NBFSPQ, or IFSAC Firefighter II certification. It is suggested a minimum of one year of experience as a Firefighter II be completed before enrolling in this program. Course Description: Major topics covered in this course are the role of the fire officer; the fire officer's responsibility in facing compliance and accountability; managing cultural diversity; safety and wellness; quality management within the organizational structure; community awareness; public relations; fire safety education; functional leadership; problem solving; performance appraisal; building construction; fire cause determination; effective communication skills; and the incident command system with strategy and tactics. Methods of instruction include lecture, discussion, online learning activities, and teamfocused practical exercises.

**HM 102 Hazardous Materials Operations****1 credit**

Course Code: HM 102 Course Length: 36 Hours Prerequisite(s): MFRI Personal Protective Equipment and SCBA (FIRE 098), Firefighter I (FIRE 101), or equivalent Course Description: Major topics covered in this course include firefighter safety; hazard recognition, regulations and standards; chemistry; recognition and identifications; DOT guidebook; site management; container behavior; defensive control measures; personal protective equipment; detection, monitoring and sampling equipment; victim rescue and recovery; decontamination; and terrorist and other criminal activity. Methods of instruction include lecture, discussion, and team-focused practical exercises.

**MGMT 110 Instructor I****2 credits**

Course Code: MGMT 110 Course Length: 33 Hours Prerequisite(s): There are no prerequisites for this course. Course Description: Major topics covered in this course are the challenges of emergency services instruction; speaking before a group; safety: the instructor's role; legal considerations; the psychology of learning; instructional delivery; practical training evolutions; and instructional media, testing, and evaluation. Methods of instruction include lecture, discussion, learner presentations, and small group learning activities.

**MGMT 204 Fire Inspector I****2 credits**

Course Code: MGMT 204 Course Length: 39 Hours Prerequisite(s): There are no prerequisites for this course. Course Description: Major topics covered in this course include an introduction to fire prevention; the code process; the inspection process; life safety codes; fire protection systems; interior finish, trim, and decorations; computing the occupant load of a multi-use building; identifying the occupancy classification of mixed-use buildings; analyzing the egress elements of a building or portion of a building; evaluating hazardous conditions; and verifying

code compliance. Methods of instruction include lecture, discussion, and team-focused practical exercises.

**RES 101 Rescue Technician – Site Operations** **1 credit**

Course Code: RES 101 Course Length: 27 Hours Prerequisite(s): MFRI Personal Protective Equipment and SCBA (FIRE 098), Firefighter I (FIRE 101) or equivalent Course Description: Major topics covered in the course include identification of support resources required for specific rescue incidents; size-up of a rescue incident; management of rescue incident hazards; management of resources in a rescue incident; conducting searches; performance of ground support for helicopter activities; termination of a technical rescue operation; triage of victims; movement of a victim in a low-angle environment; transfer of a victim to emergency medical services; tying knots, bends, and hitches; constructing a single-point anchor system; constructing a simple rope mechanical advantage system; constructing a lowering system; directing a lowering operation in a low- and highangle environment; constructing and operating a belay system during a lowering or raising operation in a high-angle environment; and conducting a system safety check.

**G.5. General Education Requirements**

The Fire Science Technology courses (FSC) are exclusively offered at the Maryland Fire and Rescue Institute. Once completed with that agency and with proof of successful completion via transcript or certification award, Wor-Wic Community College will award credit as outlined above based on this experiential learning and no formal agreement between the college and the Maryland Fire and Rescue Institute is necessary. The identified general education courses satisfy graduation requirements at the college. These courses are currently offered college academic courses and transfer to other post-secondary institutions as outlined in existing articulation agreements. According to COMAR, Associate of Applied Science degrees require a minimum of 18 credit hours of general education course work. Below are the Fire Science Technology general education requirements, satisfying COMAR and Wor-Wic Community College degree conferral standards.

The following are the specific general education courses within the Fire Science Technology curriculum:

Fall Semester – First Year of Enrollment

ENG 101	Fundamentals of English I	3 credits*
SDV 100	Fundamentals of College Study	1 credit
SOC 101	Introduction to Sociology	3 credits
GEN ED	Mathematics Requirement	3-4 credits*
GEN ED	General Elective	3 credits
<b>Total</b>		<b>13-14 credits</b>

Spring Semester – First Year of Enrollment

ENG 151	Fundamentals of English II	3 credits*
PSY 101	Introduction to Psychology	3 credits

PHE 106	Integrated Health and Fitness	3 credits
GEN ED	General Education Lab Science Requirement	4 credits
		<b>Total 13 credits</b>

Fall Semester – Second Year of Enrollment

COM 101	Introduction to Public Speaking or	
COM 200	Interpersonal Communications	3 credits
GEN ED	Elective	3 credits
EMS 101	Emergency Medical Technician I	4 credits
EMS 151	Emergency Medical Technician II	4 credits
		<b>Total 14 credits</b>

### General Education Course Descriptions

#### **BIO 101 - Fundamentals of Biology (4 Credits)**

This introductory course is designed to acquaint non-science students with the basic concepts of living organisms, including cell structure and function, metabolism, growth and reproduction, human and plant systems, genetics and evolution. *Lecture Hours: 39. Laboratory Hours: 26. Laboratory Fee: \$30. Usually offered in the fall, spring and summer.*

#### **COM 101 - Introduction to Public Speaking (3 Credits)**

This course is an introduction to the theories of oral communication, focusing on pragmatic approaches to presentational styles and organizational skills. *Lecture Hours: 39. Usually offered in the fall, spring and summer.*

#### **COM 200 - Interpersonal Communication (3 Credits)**

This course offers an introduction to the theories of interpersonal communication, focusing on the development of an awareness of communication in social and professional contexts and on the perception of self and others. The course covers theory and the application of communication strategies used in daily interactions and one-on-one and small group communication, including how verbal and nonverbal communication can be used to improve relationships. *Lecture Hours: 39. Prerequisite(s): ENG 101 with a grade of "C" or better. Usually offered in the fall and spring.*

#### **EMS 101 - Emergency Medical Technician I (4 Credits)**

This course covers the theory and techniques of basic emergency care in the prehospital setting and follows the EMT curriculum guidelines of the U.S. Department of Transportation. Topics include EMS systems, the National Incident Management System (NIMS), roles and responsibilities, medical, legal concepts, patient assessment, airway management, CPR, automated external defibrillation, communication and proper documentation. *Lecture Hours: 43. Laboratory Hours: 36. Course Fee: \$80. Laboratory Fee: \$55. Usually offered in the fall and spring.*

### **EMS 151 - Emergency Medical Technician II (4 Credits)**

This course covers the theory and techniques of basic emergency care in the prehospital setting and follows the EMT curriculum guidelines of the U.S. Department of Transportation. Topics include musculoskeletal trauma, soft tissue trauma, bleeding and shock, cardiology, respiratory, diabetes, allergic reactions, gastrointestinal complaints, toxicology, environmental and behavioral patients, obstetrics and gynecology, pediatrics, triage, ambulance operations and hazmat operations. After successfully completing EMS 101 and 151, students are eligible for Maryland and national registry testing. *Lecture Hours: 43. Laboratory Hours: 36. Field Experience Hours: 16. Prerequisite(s): EMS 101 with a grade of "C" or better within the past two academic years. Course Fee: \$80. Laboratory Fee: \$55. Usually offered in the fall and spring.*

### **ENG 101 - Fundamentals of English I (3 Credits)**

This course is designed to help students develop their college-level writing skills with an emphasis on the writing process. This course includes an introduction to research skills. Students write summary assignments and a series of essays in various modes, culminating in an argumentative research paper. Students must earn a grade of "C" or better in this course in order to enroll in ENG 151. *Lecture Hours: 39. Prerequisite(s): ENG 095 and ENG 096, or ENG 097, with grades of "C" or better, or acceptable reading and writing placement test scores. Usually offered in the fall, spring and summer.*

### **ENG 151 - Fundamentals of English II (3 Credits)**

This course continues to help students develop their college-level writing skills. Students are introduced to the study of literature (prose, poetry, fiction and drama). Students integrate outside sources with their own ideas in written arguments. They also refine their research and documentation skills. *Lecture Hours: 39. Prerequisite(s): ENG 101 with a grade of "C" or better. Usually offered in the fall, spring and summer.*

### **MTH 102 - Mathematical Applications (3 Credits)**

Students develop the ability to reason with quantitative information through the study of the principles of reasoning, numbering sense, probability and statistical reasoning, and mathematical modeling. This liberal arts course develops mathematical ideas that students encounter in college and career settings. *Lecture Hours: 39. Prerequisite(s): ENG 095 or ENG 097 and MTH 092 with grades of "C" or better or acceptable reading and mathematics placement test scores. Usually offered in the fall and spring.*

### **MTH 152 - Elementary Statistics (3 Credits)**

This course introduces elementary statistics through a critical examination of its subjects and applications. Topics from descriptive statistics include data organization, expectation and measures of variation. Also covered are random variables, probability laws, counting techniques, binomial and normal distributions, applications of the central limit theorem, confidence intervals and tests of statistical hypotheses involving the mean, median and proportions. Topics from parametric and nonparametric statistics are introduced. *Lecture Hours: 39. Prerequisite(s): ENG 095 or ENG 097 and MTH 092 with grades of "C" or better or acceptable reading and mathematics placement test scores. Usually offered in the fall, spring and summer.*

### **PHE 106 - Integrated Health and Fitness (3 Credits)**

This course covers the basic concepts of personal and community health, with an emphasis on physical fitness, nutrition, stress management, weight management, sexual health, disease and environmental health. Specific personalized techniques for optimizing health are emphasized. *Lecture Hours: 39. Laboratory Hours: 39. Usually offered in the fall, spring and summer.*

### **PHY 104 - Physical Science (4 Credits)**

This course introduces students to the fundamental concepts of the physical sciences with an emphasis on practical applications, especially those that integrate the natural sciences. *Lecture Hours: 39. Laboratory Hours: 26. Prerequisite(s): MTH 099 with a grade of "C" or better or an acceptable mathematics placement test score. Laboratory Fee: \$30. Usually offered in the spring.*

### **PSY 101 - Introduction to Psychology (3 Credits)**

The aim of this course is to provide students with a basic overview of psychology as a behavioral science and to help students develop a more comprehensive and accurate understanding of human behavior. Topics include psychology and development, cognitive processes, learning, intelligence, motivation and emotion, perception, personality, behavior and psychotherapy. *Lecture Hours: 39. Usually offered in the fall, spring and summer.*

### **SDV 100 - Fundamentals of College Study (1 Credit)**

This course is designed to introduce students to the information and habits that facilitate academic success at the college level. The course presents modules focusing on the expectations and realities of college responsibility; active learning and critical thinking skills; increasing motivation and decreasing stress; analyzing the syllabus, instructor and course; establishing a learning style; organizing and balancing family, work and school; improving study and note-taking skills, and test-taking strategies; advisement, registration and the college catalog; safety, student services and other administrative resources; rules, regulations and civility; and lifelong learning. Students who do not pass this course must take it again the following fall or spring term. *Lecture Hours: 15. Usually offered in the fall, spring and summer.*

### **SOC 101 - Introduction to Sociology (3 Credits)**

This course stresses the study of man in his social relationships. Topics include the patterns of culture, population, social institutions (familial, educational, religious, economic and political) and social change. *Lecture Hours: 39. Usually offered in the fall, spring and summer.*

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

The Fire Science Technology program does not have any specialized accreditation or certifications. This curriculum is specialized to the EMS industry.

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

The Fire Science Technology program does not have any contracts with other institutions.

## **G.8. Fire Science Technology Program Curriculum and Program Information**

Students seeking enrollment in the Fire Science Technology program will receive advisement from the college's Academic Advising Center. Program information will be outlined on the college website, on the EMS webpage, within the Health Care pathway.

## **G.9. Fire Science Technology Program Advertising, Recruitment, and Admission Materials**

Advertising for the Fire Science Technology program will occur as part of the Health Care pathway. Program information and admission materials will be outlined on the Emergency Medical Services webpage and via documentation provided by the Academic Advising Center.

## **H. Adequacy of Articulation**

FSC courses will not articulate with partner institutions, however, general education courses will transfer to four-year institutions under existing articulation agreements between postsecondary higher education agencies. The college is working on a Memorandum of Understanding with MFRI to streamline the course transfer and awarding college credit for prior learning according to verified transcripts. The Fire Science Technology program awards an Associate of Applied Science degree, intended for career entry upon degree completion.

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

Credit is being awarded for experiential learning as part of the student's employment and at the Maryland Fire and Rescue Institute training locations. General Education college faculty will deliver the general education and emergency medical services courses. Occupational courses in Fire Science will be delivered by the Maryland Fire and Rescue Institute.

Faculty are evaluated annually for effectiveness and student outcomes. Faculty are required by college policy to participate in annual professional development activities. All course modalities utilize the Blackboard learning management system. All online and hybrid courses must undergo approval by the college's distance learning committee utilizing the Quality Matters Rubrics.

Full-time and part-time general education faculty will provide instruction to Fire Science Technology students. The following chart identifies the some of the general education and emergency medical services faculty qualified to provide instruction in the Fire Science Technology, Associate of Applied Science degree:



<b>Faculty</b>	<b>Title/Rank</b>	<b>Department</b>	<b>Course</b>
Charles Barton	Clinical Coordinator and Assistant Professor of EMS	EMS	EMS Courses
Daniel Webster	Department Head and Assistant Professor of EMS	EMS	EMS Courses
Dr. Subrata Biswas	Assistant Professor of Biological Science	Math/Science	BIO 099, BIO 202, BIO 203
Allison Collins	Instructor of Biological Science	Math/Science	ENV 101, BIO 220
Dr. Stacey Hall	Math and Science Department Head and Professor of Biological Sciences	Math/Science	BIO 099, BIO 202, BIO 203, BIO 104, BIO 105
Dr. Upul Senaratne	Assistant Professor of Physical Science	Math/Science	PHY 121, PHY 122
Dr. Heidi Walker	Assistant Professor of Physical Science	Math/Science	CHM 105, CHM 106
Kathie Noonan	Associate Professor of Mathematics	Math/Science	MTH 152, MTH 121
Alketa Nina	Associate Professor of Mathematics	Math/Science	MTH 160, MTH 201
Mary Lou Townsend	Assistant Professor of Mathematics	Math/Science	MTH 102, MTH 152
Shane Ferguson	Instructor of Social Science	Human Services	PSY 101, SOC 101
Dr. Ryan Messatzzia	Professor of Human Services	Human Services	PSY 101
Dr. Andria Kallarakal	Human Services Department Head and Associate Professor of Social Science	Human Services	SOC 101
Bridget Benshetler	Assistant Professor of Health and Wellness	Human Services	PHE 106
Dr. Dana Burnside	Professor of Communication Studies	Arts and Humanities	COM 101, COM 102
Dr. Dara Phillips	Assistant Professor of Communication Studies	Arts and Humanities	COM 101
Dr. Amy Oneal-Self	Professor of English	Arts and Humanities	ENG 101, ENG 151, COM 101

Dr. Jenny McFadden	Associate Professor of Arts and Humanities	Arts and Humanities	ENG 101, ENG 151
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## J. Adequacy of Library Resources

The college has a primary media center located in the main academic building and additional smaller satellite resource centers throughout other academic buildings on campus. The college also has an online electronic research database that can be accessed on campus or off campus. Student assistance is provided by the Librarian, Assistant Librarian and work study students for writing assignments requiring electronic resources, references, and citations of peer-reviewed resources.

## K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment

All students are given access to Office 365 and are given a student email account upon admission to the institution. All courses, online, hybrid or traditional face to face, utilize the Blackboard learning management system.

All classrooms are “smart classrooms” with computers, projectors, and other electronic resources. Faculty have adequate office space on campus and are required to maintain office hours throughout the semester to meet with students. Writing and mathematics resource centers are available for students to utilize when needed.

## L. Adequacy of Financial Resources with Documentation

Table 1 explains the financial resources for the Fire Science Technology program. The budget allocations reflect the possibility for part-time and full-time student enrollment in the general education courses required for degree attainment. Since the Fire Science Technology program is the first of its kind in the college service area, the college anticipates enrollment growth within the first 5 years of program implementation.

Resource Categories	FY24	FY25	FY26	FY27	FY28
1. Reallocated funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	0	\$ 28,728.00	\$ 82,200.00	\$ 101,520.00	\$ 104,400.00
a. Number of F/T students	0	0	0	0	0
b. Annual tuition/fee rate	\$4,120.00	\$4,216.00	\$4,312.00	\$4,408.00	\$4,504.00
c. Total F/T revenue (a * b)	0	0	0	0	0
d. Number of P/T students	8	15	18	18	18

e. Credit hour rate	\$133.00	\$137.00	\$141.00	\$145.00	\$151.00
f. Annual credit hour	27	40	40	40	40
g. Total P/T revenue (d * e * f)	\$ 28,728.00	\$ 82,200.00	\$ 101,520.00	\$ 104,400.00	\$ 108,720.00
3. Grants, Contracts & other external sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	\$ 28,728.00	\$ 82,200.00	\$ 101,520.00	\$ 104,400.00	\$ 108,720.00

Since this program is based on awarding college credit for experiential learning at the Maryland Fire and Rescue Institute, there are not new or additional fiscal requirements for the program. General education courses are taught through other departments at the college. Courses transferred in from MFRI, are instructed by subject matter experts at no expense to Wor-Wic Community College.

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (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
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	0	0	0	0	0
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)	0	0	0	0	0

## **M. Adequacy of Provisions for Evaluation of Program**

Per college policy, the program is annually assessed using data pertaining to student learning outcomes, goal completion and retention. Faculty are also evaluated annually. There is no fiscal cost to the college for this program.

## **N. Consistency with the State's Minority Student Achievement:**

The college is an open enrollment institution. Students from all ethnicities are encouraged to apply. This program will benefit all students who are already employed in the fire service looking to gain skills for promotional advancement as well as those who are looking to enter the emergency services field. The Fire Science Technology program is designed to service the entire EMS community, of all cultural backgrounds.

Through the college planning process, the college mission and vision were recently revised along with clarification of college values. This provides a renewed emphasis on diversity and the college's commitment to the success of minority students. The new strategic plan has identified diversity, equity, and inclusion as the focus of strategic priority 2 which states, the college will "Nurture and actively promote diversity, equity and inclusion among students and employees" (Wor-Wic Strategic Plan, 2021). Additionally, the language explaining the college value of diversity has been clarified and states the following: "Diversity is embracing all people, ideas and experiences by creating an inclusive, equitable, safe and supportive environment". To this end, the college has established a renewed commitment to the success of minority students and its diverse student population.

## **O. Relationship to Low Productivity Programs Identified by the Commission:**

The Fire Science Technology program is not related to any identified low productivity program.

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

The college has vetted distance learning educational offerings. Faculty are well trained and diverse in online education. All courses undergo a strict approval process using the Quality Matters Rubrics and formal review from the college's distance education committee. The core Fire Science Technology courses will not be offered in a distance modality. The general education courses may be offered via distance learning modalities. Students may complete general education courses for the Fire Science Technology degree in a variety of instructional formats according to student scheduling needs. Completing general education courses via distance education methods is not a requirement of the degree.

**ARTICULATION AGREEMENT**  
**Between**  
**Wor-Wic Community College**  
**And**  
**Maryland Fire and Rescue Institute**

**Preamble**

As partners in education, this articulation agreement between Wor-Wic Community College (WWCC) and Maryland Fire and Rescue Institute (MFRI) establishes the relationship between courses taken at WWCC and training received from the Maryland Fire and Rescue Institute that enables eligible students to earn an Associate of Applied Science (AAS) Degree in Fire Science.

**Agreement**

**WHEREAS** WWCC and MFRI are committed to expanding educational opportunities, and

**WHEREAS** the two institutions are committed to providing a smooth transition for students wishing to earn an associate degree, and

**WHEREAS** the intent of the two institutions is to avoid duplication of curricula where appropriate within articulated programs of study, and

**WHEREAS** the two institutions better serve the educational growth of students and the economic development of the community through cooperative educational planning and optimal utilization of community resources,

**THEREFORE, BE IT RESOLVED** that this agreement commits the partners to full support of an articulation process between similar academic programs offered by the two institutions.

**Provisions**

1. WWCC provides general education courses at WWCC locations, and MFRI provides the technical courses at MFRI sites.
2. MFRI courses will be accepted in transfer for college credit by WWCC upon receipt of an official transcript provided directly from MFRI showing successful completion of all technical courses.
3. Both institutions will follow the joint program curriculum shown in the course-by-course outline on the attached "Wor-Wic Community College and Maryland Fire and Rescue Institute Course Articulation" document.
4. Both institutions will cooperate toward developing, disseminating, and presenting the articulated program information to students.
5. Students are subjected to the policies and procedures of each institution.
6. Either institution may terminate or initiate changes to this articulation of the "Wor-Wic Community College and Maryland Fire and Rescue Institute Course Articulation" agreement at any time. Both institutions reserve the right to modify the programs as necessary and agree to inform the appropriate individuals in writing of said changes 60 days before modifications are enacted.

7. Both Institutions agree that students who enter WWCC under this program and remain continuously enrolled each fall and spring semester will be allowed to complete the program according to the "Wor-Wic Community College and Maryland Fire and Rescue Institute Course Articulation" document.
8. WWCC will award an AAS degree in Fire Science to each student who successfully completes the courses identified in "Wor-Wic Community College and Maryland Fire and Rescue Institute Course Articulation" document.

### Approval

Approval for this articulation agreement between WWCC and MFRI is authorized for a period of one year and will be implemented when both parties have signed and dated this agreement.

\_\_\_\_\_  
Dr Kristin Mallory  
Vice President for Academic Affairs  
Wor-Wic Community College

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dr. Murray Hoy  
President  
Wor-Wic Community College

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mr. Michael E. Cox, Jr.  
Director  
Maryland Fire and Rescue Institute

\_\_\_\_\_  
Date

# Wor-Wic Community College and Maryland Fire and Rescue Institute Course Articulation

## I. Introduction

The Maryland Fire and Rescue Institute (MFRI) of the University of Maryland is recognized as the State's comprehensive training and education system for emergency services. The Institute plans, researches, develops, and delivers quality programs to enhance the ability of emergency services providers to protect life, the environment and property. MFRI is the State's fire and emergency service training agency.

The Institute has more than 70 years of experience in providing training to protect the citizens of Maryland. The Field Operations Section is responsible for the delivery of field programs throughout the regions teaching programs to reflect the current dynamics within emergency services. The Logistical Support Section is responsible for the operation and maintenance of the training centers, equipment, vehicle and props. The Special Programs Section provides counseling and training services to industry and government in safety, regulatory compliance, and emergency response.

In recognition of MFRI's excellent teaching programs and the quality of Wor-Wic Community College's (WWCC) general education courses, the specific courses identified in Section II, 'Articulated Credits,' compose the Fire Science AAS degree.

## II. Articulated Credits

WWCC has agreed to grant articulated college credit for the following courses to students upon successful completion of the following list of courses at MFRI of the University of Maryland, which is indicated with a "passing" grade on the transcript. Credits for MFRI courses will be transferred into the college based on this agreement.

Course No	Course Title	Credits
FIRE-101	Firefighter I	3
HM-102	Hazardous Materials Operations	1
FIRE-130	Emergency Vehicle Operator	1
FIRE-113	Pumping Apparatus Driver/Operator	1
FIRE-114	Aerial Apparatus Driver/Operator	1
FIRE-201	Firefighter II	3
FIRE-202	Truck Company Fireground Operations	1
MGMT-110	Instructor I	2
MGMT-204	Fire Inspector I	2
RES-101	Rescue Technician: Site Operations	1
MGMT-201	Fire Officer I	4
	<b>TOTAL TECHNICAL COURSE CREDITS</b>	<b>20</b>

Students will receive a total of 20 articulated credits for their successfully completed coursework by submitting an official transcript (found here: <https://zone.mfri.org/student/transcript/>) from MFRI once all MFRI coursework is complete. The student must also be current at Wor-Wic and have completed at least one 100-level (or higher) course at the college.

### III. Fire Science Associate of Applied Science Degree Program, effective with MOU, Fall 2023

MARYLAND FIRE & RESCUE INSTITUTE			WOR-WIC COMMUNITY COLLEGE		
COURSE #	COURSE TITLE	CR	COURSE #	COURSE TITLE	CR
FIRE-101	Firefighter I	3	SDV-100	Fundamentals of College Study	1
HM-102	Hazardous Materials Operations	1	ENG-101	Fundamental of English I	3
FIRE-130	Emergency Vehicle Operator	1	COM-101 or COM-200	Intro to Public Speaking OR Interpersonal Communication	3
FIRE-113	Pumping Apparatus Driver/Operator	1	PSY-101	Intro to Psychology	3
FIRE-114	Aerial Apparatus Driver/Operator	1	ENG-151	Fundamentals of English II	3
FIRE-201	Firefighter II	3	GEN ED	Biological/Physical Science	4
FIRE-202	Truck Company Fireground Operations	1	GEN ED	Mathematics	3-4
MGMT-110	Instructor I	2	PHE-106	Integrated Health and Fitness	3
MGMT-204	Fire Inspector I	2	GEN-ELEC	General Elective	3
RES-101	Rescue Technician: Site Operations	1	SOC-101	Intro to Sociology	3
MGMT-201	Fire Officer I	4	EMS-101	Emergency Medical Technician I	4
			EMS-151	Emergency Medical Technician II	4
			GEN-ELEC	General Elective	3
<b>TOTAL CREDITS</b>					60-61