FROSTBURG
STATE UNIVERSITY

March 28, 2024

Sanjay Rai, Ph.D., Secretary of Higher Education
Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201

Dear Dr. Rai,

The Department of Computer Science at Frostburg State University (FSU) seeks approval to establish a new Bachelor of Science in Applied Computer Science at the University System of Maryland at Hagerstown (USMH). This program is designed to provide students with a comprehensive education in the practical applications of computing, focusing on critical areas such as software development, cybersecurity, data analytics, and artificial intelligence.

Proposal Title:	New Program
Proposed Program Title:	Applied Computer Science (USMH)
Award Level:	Bachelor of Science
HEGIS:	110701
CIP:	070100

Frostburg State University respectfully requests a waiver of the on-campus requirement and for the new program with the dual modality to be offered at the Regional Higher Education Center in Hagerstown per COMAR 13B .02.03.20(A)(1). We would appreciate your support for the proposed new program at USMH. If you have any questions, please reach out to our Associate Vice President of Student Success Dr. Sara-Beth Bittinger at sbittinger@frostburg.edu.

Sincerely,

Darlene Brannigan Smith, PhD
Interim President

pc: Dr. Candace Caraco, Associate Vice Chancellor for Academic Programs, Academic and Enrollment Services & Articulation, USM
Dr. Lawrence Weill, Interim Provost and Vice President for Academic Affairs, FSU
Dr. Sara-Beth Bittinger, Associate Vice President of Student Success, FSU
Dr. Sudhir Singh, Dean of the College of Business, Engineering, and Computational & Mathematical Sciences, FSU

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

Institution Submitting Proposal	Frostburg State University

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
- ○ Substantial Change to a Degree Program
- ○ Cooperative Degree Program
- ○ Off Campus Program
- ◉ Offer Program at Regional Higher Education Ctr.

Department Proposing Program	Computer Science & Information Technologies	
Degree Level and Degree Type	Bachelor of Science (B.S.)	
Title of Proposed Program	Applied Computer Science (USMH)	
Total Number of Credits	120	
Suggested Codes	HEGIS: 0701.00	CIP: 11.0701
Program Modality	○ On-campus ○ Distance Education (*fully online*) ◉ Both	
Program Resources	◉ Using Existing Resources ○ Requiring New Resources	
Projected Implementation Date	◉ Fall ○ Spring ○ Summer	Year: 2025
Provide Link to Most Recent Academic Catalog	URL: https://www.frostburg.edu/academics/academic-catalogs.php#/programs/BJjN_hIv_?q=APPLIED%20COMPUTER%20SCIENCE	
Preferred Contact for this Proposal	Name: Nooh Bany Muhammad	
	Title: Assistant Professor	
	Phone: (301) 687-4719	
	Email: nbany@frostburg.edu	
President/Chief Executive	Type Name: Darlene Brannigan Smith	
	Signature: Darlene B Smith	Date: 3/12/2025
Approval/Endorsement by Governing Board	Type Name:	
	Signature:	Date:

Revised 5/7/18

Section A. Centrality to Institutional Mission and Planning Priorities:

1. Description of the Program and Its Alignment with the Institution's Mission

The Bachelor of Science in Applied Computer Science at Frostburg State University (FSU) is structured to provide a comprehensive education in practical and applied computing skills, essential for addressing modern challenges in technology-driven industries. This program aligns with the University's mission by focusing on experiential learning and preparing students for professional success. FSU, recognized as a public comprehensive and teaching university, has a longstanding commitment to fostering intellectual growth and equipping students with critical problem-solving, communication, and decision-making skills. The Applied Computer Science program contributes to this mission by offering a curriculum that emphasizes practical applications in software development, cybersecurity, data analytics, and artificial intelligence.

2. Support for the Institution's Strategic Goals and Institutional Priority

The proposed program supports Frostburg State University's strategic goals, specifically:

- **Focusing Learning on Knowledge Acquisition and Application:** The program integrates innovative practices and technology into the curriculum, ensuring students acquire essential skills and knowledge for success in the workforce. By infusing applied learning throughout the curriculum, students are prepared to tackle real-world problems effectively.
- **Providing Engaging Experiences:** The program includes a robust advising and support structure, guiding students from application through graduation. It incorporates career and professional development opportunities, fostering a campus climate that enhances student well-being and cultural competence.
- **Expanding Regional Outreach and Engagement:** The program supports economic development in Western Maryland through initiatives that prepare students to meet the region's workforce needs. It also promotes the University's strengths and successes, attracting students and faculty dedicated to addressing community needs.
- **Aligning University Resources:** The program aligns with the University's efforts to meet student and workforce expectations through targeted recruitment and retention plans. It also supports the strategic allocation of human, fiscal, and physical resources, ensuring the program's sustainability and effectiveness.

3. Funding for the First Five Years of Program Implementation

The program will be financially supported through a combination of reallocated funds, tuition and fee revenue. All resource estimates are based on current rates without inflation.

The financial plan for the first five years includes:

- **Reallocated Funds:** Resources from existing programs and faculty positions will be redirected to support the new program, ensuring that it is adequately staffed and resourced.

- **Tuition and Fee Revenue:** Projected student enrollment, including both full-time and part-time students, will generate additional revenue to sustain the program.

- **External Funding:**
  N/A

- **Other Sources**
  N/A

These measures are detailed in Section L, where a comprehensive financial plan, including projected revenues and expenditures, is presented.

4. Commitment to Ongoing Support and Program Continuation

a) Ongoing Administrative, Financial, and Technical Support:
FSU is committed to providing continuous administrative, financial, and technical support for the program. This includes maintaining a dedicated faculty team, ensuring access to modern facilities and technology, and offering professional development opportunities for faculty to stay current in their fields. The University will also provide marketing and recruitment support to attract a diverse and talented student body.

b) Continuation of the Program:
The University guarantees the continuation of the program, ensuring that all enrolled students can complete their degrees. This commitment is backed by strategic planning and resource allocation, which prioritize the program's long-term viability and alignment with institutional goals. Our university is dedicated to supporting the program as a key component of its academic offerings, contributing to the University's mission and strategic objectives.

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

1. Demonstrating Demand and Need for the Program

a) The Need for the Advancement and Evolution of Knowledge:
The rapid technological advancements and the growing complexity of computing systems necessitate the continuous evolution of educational programs in computer science. The Bachelor of Science in Applied Computer Science at Frostburg State University addresses this need by providing a curriculum that incorporates cutting-edge topics such as artificial intelligence, cybersecurity, and data analytics. The program is designed to equip students with the latest knowledge and practical skills required to innovate and lead in the technology sector. This aligns with the broader societal need to develop a workforce capable of advancing technology and contributing to economic growth.

b) Societal Needs, Including Expanding Educational Opportunities:
This program offers significant opportunities for minority and educationally disadvantaged students to pursue careers in high-demand technology fields. By providing access to quality education in applied computer science, FSU aims to reduce educational disparities and promote inclusivity. The program's structure includes support systems such as academic advising, career counseling, and tutoring, which are crucial for ensuring the success of underrepresented groups. Additionally, the program's emphasis on practical skills makes it particularly attractive to students who may not have previously considered a traditional computer science pathway.

c) Strengthening Historically Black Institutions (HBIs):
While Frostburg State University is not an HBI, the introduction of this program aligns with statewide efforts to enhance the capacity of all Maryland institutions to provide high-quality and unique educational programs. The Applied Computer Science program contributes to the overall goal of offering diverse and specialized education options across the state's higher education landscape. The program's focus on practical applications and industry alignment serves as a model that can be emulated by other institutions, including HBIs, to strengthen their offerings in technology education.

2. Consistency with the Maryland State Plan for Postsecondary Education

The Bachelor of Science in Applied Computer Science program is consistent with the goals and priorities outlined in the 2022 Maryland State Plan for Postsecondary Education. Specifically, the program aligns with the following goals and priorities:

- **Goal 1: Equitable Access:** The program aims to increase access to high-quality education in applied computer science, particularly for minority and educationally disadvantaged students. By offering a curriculum that is both rigorous and practical, the program provides an equitable pathway for all students to enter the technology workforce.
- **Priority 5: Commitment to Quality Academic Programs:** The program emphasizes the delivery of high-quality, relevant education that meets industry standards and prepares students for immediate employment. The curriculum is designed in consultation with industry partners and incorporates best practices in teaching and learning, ensuring that graduates are well-prepared to meet the demands of the technology sector.
- **Priority 7: Lifelong Learning:** The program supports lifelong learning by providing opportunities for continuing education and professional development. This includes offering advanced courses and certificates that allow students and professionals to stay current with technological advancements. The flexible structure of the program also accommodates adult learners and working professionals seeking to enhance their skills.

The proposed Bachelor of Science in Applied Computer Science program not only meets the immediate educational and workforce needs of the region and state but also contributes to long-term goals of fostering innovation and enhancing the quality of life for Maryland's residents. By aligning with the 2022 Maryland State Plan, FSU reaffirms its commitment to providing high-quality, accessible education that prepares students for success in a rapidly changing world.

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

1. Potential Industries, Employment Opportunities, and Expected Level of Entry

Graduates of the Bachelor of Science in Applied Computer Science program at FSU can expect to find employment in a variety of industries, including technology, finance, healthcare, government, cybersecurity, and education. The program prepares students for roles such as software developers, information security analysts, and data scientists, with opportunities ranging from entry-level positions to mid-level management roles.

2. Data and Analysis Projecting Market Demand and Job Availability

According to the U.S. Bureau of Labor Statistics (BLS) and the Maryland Department of Labor, the demand for professionals in applied computer science fields is projected to grow significantly from 2022 to 2032:

- **Software Developers:** The BLS projects a 26% growth in employment for software developers, quality assurance analysts, and testers. This demand is driven by the expansion of software development, particularly in areas such as artificial intelligence, Internet of Things (IoT), and other automation technologies.
- **Information Security Analysts:** Employment for information security analysts is expected to increase by 32%, reflecting the critical need for cybersecurity professionals to protect organizations from increasing cyber threats.
- **Data Scientists:** Data scientist positions are projected to grow by 35%, a much faster rate than the average for all occupations. The growth is due to the rising importance of big data analytics across various sectors, including business, healthcare, and government (Bureau of Labor Statistics) (Bureau of Labor Statistics).

3. Evidence of Market Surveys and Anticipated Vacancies

Market surveys and industry feedback highlight a strong demand for graduates with practical skills in applied computer science. Employers have emphasized the need for professionals capable of implementing advanced computing technologies in real-world applications.

Anticipated vacancies include:

- **Software Developers:** An estimated 153,900 new job openings annually nationwide, with a substantial portion in Maryland.
- **Cybersecurity Analysts:** Over 5,000 new positions expected statewide, reflecting the increasing focus on information security.

- **Data Scientists:** Approximately 17,700 openings annually, driven by the increasing reliance on data analytics (Bureau of Labor Statistics).

4. Current and Projected Supply of Prospective Graduates

The current supply of graduates in Maryland does not fully meet the projected demand for applied computing professionals. According to the Maryland Department of Labor, there were approximately 1,200 graduates in computing-related fields in 2023. However, with roles like software developers, information security analysts, and data scientists expected to grow by 31.22%, 38.81%, and 39.32% respectively by 2032, the state will need an additional 500 to 700 graduates annually to fill this gap. Although several institutions in the state offer related programs, FSU's new program is uniquely positioned with its focus on applied skills and practical training, which is expected to attract a significant number of students and help bridge the gap in this high-demand field.

Current Supply: Limited availability of graduates with the necessary practical experience and industry-aligned skills, particularly in specialized areas like software development, cybersecurity, and AI.

Projected Supply: The new program at FSU aims to produce around 25-30 graduates annually
, contributing to the regional workforce and helping to fill the projected vacancies in high-demand fields.

The data and analysis clearly indicate a compelling need for the program. The program is strategically positioned to address the current and future needs of the job market, providing students with the skills and knowledge necessary to succeed in a rapidly evolving technological landscape.

Section D. Reasonableness of Program Duplication:

1. Similar Programs in the State and Geographic Area

In Maryland, while there are several universities offer computer science programs, none provide the applied focus that FSU's new program delivers, examples include:

- **University of Maryland College Park (UMCP):** Offers a comprehensive computer science program with concentrations in artificial intelligence, cybersecurity, and data science.
- **University of Maryland Baltimore County (UMBC):** Focuses on both theoretical and applied aspects of computer science, including specializations in cybersecurity.
- **Towson University:** Provides a Bachelor of Science in Computer Science with practical components in software engineering and security.
- **Capitol Technology University:** Specializes in applied sciences, with strong programs in cybersecurity and software engineering.

- **Morgan State University:** Offers a diverse computer science curriculum, including software development and information systems.

2. Justification for the Proposed Program

The new program at USMH is specifically designed to meet the regional demand for practical computing skills. The program's distinct focus on applied learning and hands-on experience sets it apart from more traditional, theory-based programs. The proposed program was well received by current students, industry respondents, faculty at Hagerstown Community college, and elsewhere very well. Top examples of characteristics that make this program stand apart from others include:

- **Applied Learning:** Emphasis on real-world applications, including projects and internships, directly preparing students for the workforce.
- **Flexible Delivery:** Online, blended and hybrid options cater to non-traditional students, including working professionals and veterans.
- **Regional Focus:** Addresses the specific needs of Western Maryland, an area underserved by similar programs.
- **Great Option for Local Students:** Offers an excellent opportunity to earn a BS degree in the Hagerstown region, where such programs are limited.
- **Strong Industry and Student Reception:** Surveys indicate that this degree is highly valued by both industry professionals and students, who see it as a well-received and relevant credential.

These elements make FSU's program unique and necessary.

Section E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

The new program is strategically designed to meet the unique needs of the Western Maryland region. This program focuses on delivering practical and applied computing skills, including software development, cybersecurity, and data analytics. Unlike many HBIs, which are often located in urban settings and serve diverse urban populations, the USMH campus primarily caters to students from rural areas. The program's emphasis on industry-aligned skills, practical applications, and hands-on experiences is tailored to meet the specific economic and technological demands of these regions.

This distinction ensures that the FSU program at USMH does not overlap with the high-demand programs at HBIs, which often focus on culturally significant curricula and support systems tailored to their unique student demographics. Instead, it provides an essential complement to the educational landscape, offering opportunities in applied technology education that are not the primary focus of HBIs. By focusing on different regional and demographic needs, the FSU program respects and preserves the specialized missions and contributions of HBIs in promoting cultural heritage, social justice, and equity.

Section F: Relevance to the Identity of Historically Black Institutions (HBIs)

The implementation of the new program at the USMH campus is carefully designed to avoid impacting the unique institutional identities and missions of Historically Black Institutions (HBIs). HBIs play a crucial role in promoting educational opportunities that highlight African American culture and history and foster a supportive environment for students from underrepresented backgrounds. In contrast, the USMH campus, located in Hagerstown, serves a rural and non-urban population, focusing on applied technical education to meet local workforce needs.

The program's technical and professional orientation, specifically targeting the rural workforce development in Western Maryland, aligns with the state's broader educational goals without encroaching on the culturally focused missions of HBIs. The FSU program at USMH enhances the diversity of educational opportunities in Maryland by filling a specific niche in applied computer science education, which is essential for the technological advancement and economic development of the region. This targeted approach ensures that the introduction of the program does not detract from the unique contributions of HBIs, instead enriching the state's higher education system by addressing distinct and underserved educational needs.

Section G: Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

1. Program Establishment and Faculty Oversight

The new program has been established to address the specific needs of the Western Maryland region. The program design incorporates feedback from industry professionals and academic experts, ensuring its relevance and quality.

Faculty Oversight**:** The program will be managed by a dedicated team of faculty members with expertise in various aspects of computer science. Key faculty members include Dr. Michael B. Flinn, Dr. Xunyu Pan, Dr. Liangliang Xiao, Dr. Wenjuan Xu, Dr. Xinliang Zheng, Dr. Zhijiang Chen, Dr. Chung-Chi Huang, Dr. Nooh Bany Muhammad, Dr. Ying Zheng, Dr. Yuechen Chen, Ms. Rebecca Flinn, Mr. Steve Kennedy, and Ms. Mian Qian.

2. Educational Objectives and Learning Outcomes

Educational Objectives: The program aims to develop students' abilities to apply computing principles in real-world contexts, preparing them for careers in applied computer science and related fields.

Learning Outcomes:

- **Applied Computational Knowledge:** Students will demonstrate proficiency in core computational concepts, such as algorithms and software development, and apply this knowledge to solve complex, real-world problems.

- **Practical Problem Solving:** Graduates will demonstrate good skills in analyzing and designing computing solutions, implementing systems that meet specific needs and constraints.
- **Application of Theoretical and Practical Knowledge:** Students will integrate theoretical principles with practical skills, enabling them to analyze, design, and implement efficient computing solutions in various contexts.
- **Ethical and Professional Responsibilities:** Graduates will understand the professional, ethical, legal, security, and social issues and responsibilities related to the computing field. They will adhere to ethical standards in all professional activities.
- **Communication and Teamwork:** Students will develop effective communication skills, both written and oral, and will be able to function effectively in teams to accomplish shared goals.

3. Assessment and Documentation of Student Achievement

a) Assessment of Student Achievement: uses digital platforms to assess and document student achievement in the program. Canvas serves as the primary Learning Management System (LMS), supporting course content delivery, assignments, quizzes, and performance tracking. Microsoft Teams facilitates virtual classrooms and collaboration, while OneDrive and Office 365 enable cloud-based document storage and sharing for assignments and projects.

b) Documentation of Student Achievement: Grades and feedback are securely stored on Canvas, providing a comprehensive record of student progress. Performance analytics help instructors monitor engagement and outcomes, ensuring timely support. Regular assessment reports evaluate the curriculum's effectiveness and guide continuous improvement, maintaining alignment with program objectives. This system supports FSU's commitment to high-quality education in applied computer science.

4. Course List and Program Requirements

Requirements for Major in Applied Computer Science. Grand Total Credits: 73-74

1. **Core Courses** *(28 hours):*
   COSC101 - The Discipline of Computer Science (3)
   COSC102 - Foundations of Computer Science (4)
   SCIA120 - Introduction to Cybersecurity and Information Assurance (3)
   COSC240 - Computer Science I (4)
   COSC241 - Computer Science II (4)
   COSC300 - Structured Systems Analysis and Design (3)
   COSC440 - Database Management Systems (3)
   COSC460 - Operating Systems Concepts (3)

COSC489 - Capstone Course (1)

2. **Required Advanced Courses** *(24 hours):*
   DTSC201 - Introduction to Data Analysis & Visualization (3)
   ITEC312 - Human-Computer Interaction (3)
   ITEC315 - Full Stack Development (3)
   COSC325 - Software Engineering (3)
   COSC331 - Fundamentals of Computer Networks (3)
   COSC455 - Artificial Intelligence (3)
   COSC456 – Applying Artificial Intelligence (3) (New Course)
   SCIA470 - Computer and Network Forensics I (3)

3. **Other Required Courses:**
   Mathematics *(9 – 10 hours):*
   Complete the following:
   MATH119 - College Algebra (3)
   MATH220 - Calculus for Applications I (3)
   Or
   MATH236 - Calculus I (4)
   Complete at least 1 of the following:
   MATH109 - Elements of Applied Probability and Statistics (3)
   MATH280 - Introductory Applied Statistics and Data Analysis (3)
   MATH380 - Introduction to Probability and Statistics (3)

   Other *(6 hours):*
   Complete at least 1 of the following:
   STCO 102 - Introduction to Strategic Communication Leadership (3)
   STCO 112 - Honors: Introduction to Strategic Communication Leadership (3)
   STCO 122 - Introduction to Public Communication (3)
   Complete the following:
   ENGL338 - Technical Writing (3)

4. **Electives** *(6 hours):*
   A minimum of 6 hours in at least two courses:
   Any 300 or 400 level Computer science courses
   and/or
   DTSC301 - Data Modeling, Wrangling, and Application (3)
   ITEC442 - Electronic Commerce (3)
   SCIA335 - Network Security (3)
   SCIA370 - Security Policy and Assessment (3)
   SCIA460 - Cloud Computing and Security (3)
   SCIA471 - Computer and Network Forensics II (3)
   SCIA472 - Hacking Exposed and Incident Response (3)
   ITEC462 - Emerging Issues and Technologies (3)
   ITEC480 - Project Management (3)

5. General Education Requirements

General education requirements are met through a broad curriculum that includes courses in humanities, social sciences, natural sciences, and mathematics.

6. Specialized Accreditation and Certification

The program will seek relevant specialized accreditation to ensure it meets academic and industry standards.

7. Contracting with Other Institutions

The department has several transfer agreements with other institutes with many articulations of courses to ensure maximum transferability of our lower level courses. Current MOUs can be found here: https://www.frostburg.edu/admissions-and-cost/undergraduate/apply/transfer-students/transfer-agreements.php

In addition, a new MOU has been created with Hagerstown Community College and is ready to be reviewed and signed by the administrators on campus.

8. Information for Students

The combination of FSU's Electronic Catalog, Canvas (LMS), PAWS (SIS), website, admissions and recruiting materials, and student information system assures Frostburg State University students will be equipped with all necessary information to assure their time to graduation.

9. Advertising, Recruiting, and Admissions

All promotional materials for the program will accurately represent the educational offerings and services available, ensuring prospective students have a clear understanding of the program's scope and benefits. FSU is committed to transparency and honesty in all recruitment and admissions communications.

The Department of Computer Science and Information Technologies at Frostburg State University maintains several articulation agreements with community colleges across the state and region. These agreements ensure seamless transfer

for students into our programs and are publicly accessible at the following link: Frostburg State University Transfer Agreements.

Of particular note:

- The agreement with Garrett College was recently updated in Spring 2024.
- The articulation agreement with Allegany College of Maryland is currently under review to ensure it remains current and reflects the most recent curriculum changes.
- A new agreement has been established with Hagerstown Community College, further strengthening our commitment to fostering pathways for community college students.
- We actively engage with ARTSYS, Maryland's Articulation System for Students, updating it with new information to ensure our transfer policies are transparent and aligned with current state policies and legal requirements. Additionally, we review coursework from other institutions regularly to ensure maximum transferability. To support this effort, we maintain an internal document that guides our department's efforts in maximizing credit transfer. This document is shared with the Admissions office to ensure clear communication with prospective transfer students.
- All agreements are, and will continue to be, made public on our University's website in accordance with MHEC guidelines.

Section I: Adequacy of Faculty Resources

1. Quality of Program Faculty

The faculty are distinguished by their academic qualifications, industry experience, and commitment to student success. Below is a summary list of the faculty members, including their appointment type, terminal degrees, academic titles, status, and the courses they are slated to teach within the program:

- **Dr. Michael B. Flinn**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** D.Sc., Information Systems and Communications, Robert Morris University
  - **Academic Title/Rank:** Professor and Chair
  - **Courses:** Network Implementation, Software Engineering, Full Stack Development
- **Dr. Xunyu Pan**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Computer Science, State University of New York at Albany
  - **Academic Title/Rank:** Professor
  - **Courses:** Fundamentals of Computer Networks, Secure Computing, Cloud Computing and Security
- **Dr. Liangliang Xiao**

    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Science, University of Texas at Dallas
    - **Academic Title/Rank:** Associate Professor
    - **Courses:** COSC 101 The Discipline of Computer Science, COSC444, COSC102
- **Dr. Wenjuan Xu**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Information Technology, University of North Carolina at Charlotte
    - **Academic Title/Rank:** Professor
    - **Courses:** Forensics, Network Security, Ethical Hacking
- **Dr. Xinliang Zheng**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Science and Engineering, University of South Carolina
    - **Academic Title/Rank:** Professor
    - **Courses:** Computer Networks, Programming
- **Dr. Zhijiang Chen**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** D.Sc., Information Technology, Towson University
    - **Academic Title/Rank:** Assistant Professor
    - **Courses:** Cybersecurity, AI/Machine Learning, Gaming
- **Dr. Chung-Chi Huang**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Information Systems and Applications, National Tsing Hua University
    - **Academic Title/Rank:** Associate Professor
    - **Courses:** Database Management Systems, Data Mining, Security in Computing
- **Dr. Nooh Bany Muhammad**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Science, University of Southern Mississippi
    - **Academic Title/Rank:** Assistant Professor
    - **Courses:** Database Systems, Operating Systems, Information Systems
- **Dr. Ying Zheng**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** D.Sc., Information Technology, Towson University
    - **Academic Title/Rank:** Associate Professor
    - **Courses:** Digital Logic, IOT, Python, Java Programming
- **Dr. Yuechen Chen**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Engineering, The George Washington University
    - **Academic Title/Rank:** Assistant Professor

    - **Courses:** Computing, Machine Learning Algorithms
- **Rebecca Flinn**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Frostburg State University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** COSC 101, COSC 102, Web Development, Knowledge Base Systems
- **Steve Kennedy**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Frostburg State University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** Programming, Data Structures, Operating Systems
- **Mian Qian**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Towson University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** Security policy, Project Management, Ethics, COSC102

2. Ongoing Pedagogy Training for Faculty

FSU is committed to continuous professional development and training for faculty, ensuring that they remain current with educational best practices and technological advancements. The following initiatives support faculty development:

- **Center for Teaching Excellence:** This center offers regular training sessions and workshops focusing on evidence-based teaching practices, pedagogy, and the effective use of technology in the classroom.

- **Instructional Design and Technology Office:** Provides specialized training in the use of Canvas, the university's Learning Management System, and other digital tools to enhance online and hybrid and blended learning environments.
- **Annual Regional Conference on Teaching and Learning:** Hosted by FSU, this conference brings together educators to discuss innovative teaching strategies, share research, and explore new educational technologies.
- **Professional Development Courses:** Regularly offered courses and workshops provide faculty with opportunities to learn about the latest trends in instructional methods, assessment techniques, and distance education best practices.

These resources ensure that FSU's faculty are well-equipped to deliver high-quality education and effectively support student learning outcomes.

Section J: Adequacy of Library Resources

Since FSU is part of the University of Maryland system, we have access to a comprehensive range of widely used resources for the program available over the Internet with FSU network credentials. The Lewis J. Ort Library has consistently provided robust support for various programs at FSU and will continue to support the new program adequately. The library's extensive digital and print collections, including two primary databases the library has to support our CSIT programs, 1) ACM Digital Library and 2) Computers & Applied Sciences Complete, are more than sufficient to meet the needs of this program.

Section K: Adequacy of Physical Facilities, Infrastructure, and Instructional Equipment

1. Physical Facilities, Infrastructure, and Instructional Equipment

The Department of Computer Science and Information Technologies (CSIT) has ensured that the physical facilities, infrastructure, and instructional equipment are adequate to support the initiation and ongoing delivery of the new program. The department has access to multiple classroom spaces on the main campus, which can be remotely accessed in situations that require specialized computing power. This flexibility is supported by the CSIT NAS (Network-Attached Storage), which can be extended to students enrolled at the University System of Maryland at Hagerstown (USMH) or accessed remotely from anywhere in the world. The main campus and USMH campus are networked with a multigigabit connection r through the MDREN network, which will ensure timely exchange of images, data, and programs between the two locations, if necessary.

Under the direction of Dr. Jacob Ashby, several rooms on USMH campus have been identified for content delivery. These spaces are equipped with the necessary technology, including cameras and microphones (fixed or portable), to capture lectures, discussions, and labs, ensuring that instructional material is readily available to both in-person and remote students.

Additionally, discussions are underway regarding developing a new computer lab at USMH dedicated to this program. This lab may also serve as an esports arena, expected to attract prospective students and spark interest in the program. The potential for this dual-use space demonstrates a forward-thinking approach to engaging students in technology and gaming, further enhancing the program's appeal.

2. Support for Distance Education

FSU is committed to ensuring that both students and faculty engaged in distance education have access to essential technological resources. Specifically:

a) Institutional Electronic Mailing System: All students and faculty members have access to the institutional email system, which facilitates

official communication, course-related discussions, and administrative processes.
b) Learning Management System (LMS): The university employs Canvas as its primary LMS, providing robust support for distance education.
c) Advanced Technological Infrastructure: To enhance remote delivery, FSU's facilities are equipped with camera and microphone arrays, enabling high-quality video and audio for live-streamed and recorded lectures, ensuring a seamless distance learning experience.

Section L. Adequacy of Financial Resources with Documentation

Table 1: Resources (Narrative)

All resource estimates are based on current rates without inflation.

1. Reallocated Funds

The program will be offered using current resources, with adjunct faculty teaching a total of 10 courses per year at a starting rate of $2,200 per course in Year 1, with a 3% annual increase in adjunct costs. In Year 3, a full-time faculty member will be hired with a starting salary of $93,000, reducing the adjunct course load to 4 courses per year. The full-time faculty salary is projected to increase to $98,664 by Year 5.

2. Tuition and Fee Revenue

Tuition and fee revenue calculations are based on new students enrolling in the Applied Computer Science program at USMH. In Year 1, we anticipate enrolling three full-time (FT) students, with an additional eight new FT students in Year 2, and so on. These calculations reflect annual revenue from new students without compounding for retention. Part-time (PT) students are also projected, with two new PT students enrolling each year. It is assumed that each PT student will enroll in two courses per semester, totaling 12 credit hours annually.

3. Grants, Contracts, and Other External Sources

N/A

4. Other Sources

N/A

TABLE 1: RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	-	-	-	-	-
2. Tuition/Fee Revenue (c+g below)	29.058	89,982	156,246	237,516	324,736
a. Number of F/T Students In-state	3	7	14	21	31
a. Number of F/T Students Out-of-state	-	1	1	2	2
b. Annual Tuition/Fee Rate In-state	7,254	7,399	7,547	7,698	7,852
b. Annual Tuition/Fee Rate Out-of-state	22,848	23,305	23,771	24,246	24,731
c. Total F/T Revenue (a x b)	21,762	75,098	129,429	210,150	292,874
d. Number of P/T Students In-State	2	4	5	5	6
d. Number of P/T Students Out-of-State	-	-	1	1	1
e. Credit Hour Rate In-State	304	310	316	323	329
e. Credit Hour Rate Out-of-State	628	641	653	667	681
f. Annual Credit Hours	12	12	12	12	12
g. Total Part Time Revenue (d x e x f)	7,296	14,884	26,817	27,366	31,862
3. Grants, Contracts, & Other External Sources	0-	0-	0-	0-	-0
4. Other Sources	-0	-0	-0	-0	0-
TOTAL (Add 1 – 4)	29,058	89,982	156,246	237,516	324,736

Table 2: Expenditures (Narrative)

1. New Faculty (# FTE, Salary, and Benefits)

No new FTTT faculty are anticipated until year three of the program. However, there will be the need for several adjunct professors in the program to support the efforts of

the current faculty in the department who will be supplementing instruction remotely and in person on the USMH campus. Please see projections in Table 2, below.

2. New Administrative Staff (# FTE, Salary, and Benefits)

None are anticipated at this time.

3. New Support Staff (# FTE, Salary, and Benefits)

None are anticipated at this time.

4. Equipment

No new equipment must be purchased directly by the department or the University. However, USMH is planning to equip a computer lab at the USMH facility with USMH funds.

5. Library

None are anticipated at this time.

6. New and/or Renovated Space

None anticipated at this time.

7. Other Expenses

None anticipated at this time.

TABLE 2: EXPENDITURES

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Total Faculty Expenses (b + c below)	23,960	24,679	145,886	150,262	154,770
a. # FTE	0.00	0.00	0.00	0.00	0.00
b. Total Salary	22,200	22,866	111,842	115,197	118,653
c. Total Benefits	1,760	1,813	34,044	35,065	36,117
2. Total Administrative Staff Expenses (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. Total Support Staff Expenses (b + c below)	0 -	0 -	0 -	0 -	0 -
a. # FTE	0.00	0.00	0.00	0.00	0.00

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)	23,960	24,679	145,886	150,262	154,770

	Year 1	Year 2	Year 3	Year 4	Year 5
Surplus	5,098	65,303	10,361	87,253	169,966

ASSUMPTIONS:
4-5 Adjunct teaching a total of 10 courses a year (Adj I 2,200 per course in Year 1). Year 3 brings in a new FT Faculty member and reduces Adjunct courses to 4 a year. Adjunct course cost increases 3% annually. In-State/Out-of-State prorate provided by USMH. 2% increase annually on tuition.

Section M: Adequacy of Provisions for Evaluation of Program

1. Procedures for Evaluating Courses, Faculty, and Student Learning Outcomes:

Evaluation of Faculty: Student evaluations for each course are collected through FSU's learning management system, Canvas, using a standardized form. These evaluations include both quantitative scores and qualitative feedback, which are aggregated and provided to instructors to inform them about teaching effectiveness and areas for improvement.

Program Evaluation Cycle: In addition to course evaluations, FSU adheres to a regular program evaluation cycle mandated by the Maryland Higher Education Commission (MHEC). This cycle ensures that the program's objectives, curriculum, and outcomes are systematically reviewed and assessed for continuous improvement and alignment with educational standards and industry needs.

Evaluation of Student Learning Outcomes: The assessment of student learning outcomes is managed through the Compliance Assist/Planning system, overseen by our department's assessment committee. This process uses direct measures like exams and projects, along with indirect measures such as surveys, ensuring alignment with the Institutional Effectiveness Cycle for continuous improvement.

1. How the Institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

FSU will evaluate the program's effectiveness through a structured review process managed by the Office of Assessment and Institutional Research (AIR). This includes a capstone course as a key component for assessing student learning outcomes. Additionally, programs will submit a Program Review Self-Study, External Review Report, and Certificate, which evaluate student retention, satisfaction, and cost-effectiveness. These evaluations guide continuous improvements to maintain program quality and relevance.

Section N: Consistency with the State's Minority Student Achievement Goals

Frostburg State University is dedicated to fostering an inclusive and diverse campus environment, particularly at the University System of Maryland at Hagerstown, where the program will be offered. The program aligns with FSU's Core Value Statement, emphasizing the development of cultural competence and respect for diverse experiences. To support minority students, the program has established specific strategies, including targeted outreach and recruitment efforts, particularly in the Hagerstown region, and collaboration with local high schools and community colleges serving diverse populations.

FSU, including the USMH campus, provides comprehensive support services such as academic advising, tutoring, and mentoring designed to address the unique needs of minority students. The University Council on Diversity, Equity, and Inclusion (UCDEI), led by the University President, plays a crucial role in enhancing diversity among faculty, staff, and students at USMH. The program also encourages involvement in culturally diverse student organizations and activities, promoting an inclusive community where all students can thrive. This approach supports the educational success of minority students and enriches the overall learning environment at USMH.

Section O: Relationship to Low Productivity Programs Identified by the Commission

The proposed program does not relate to any low productivity programs identified by the Maryland Higher Education Commission (MHEC). Therefore, there will be no redistribution of resources from existing programs. Additionally, FSU has an internal process for monitoring and addressing low productivity programs, ensuring that resources are optimally allocated. The new program will utilize existing resources at the University System of Maryland at Hagerstown (USMH) and FSU, providing adequate support without impacting other programs.

Section P: Adequacy of Distance Education Programs

FSU is approved to offer distance education as an alternative delivery method included within its scope of accreditation, as evidenced in the university's MSCHE Statement of Accreditation Status. This program supports a face-to-face, blended, hybrid and online learning environment. FSU is an approved institutional member of the National Council of State Authorization Reciprocity agreement (NC-SARA).

ACADEMIC PROGRAM ARTICULATION AGREEMENT BETWEEN HAGERSTOWN COMMUNITY COLLEGE AND FROSTBURG STATE UNIVERSITY REGARDING TRANSFER FROM ASSOCIATE OF SCIENCE IN COMPUTER SCIENCE TO BACHELOR OF SCIENCE IN COMPUTER SCIENCE

This Academic Program Articulation Agreement ("Agreement") is entered into by and between Hagerstown Community College (the "Sending Institution") and Frostburg State University (the "Receiving Institution") (collectively, the "Institutions") to facilitate the transfer of academic credits from Associate of Science in Computer Science, HEGIS 498001 and CIP 110101, for the completion of the Bachelor of Science in Computer Science, HEGIS code 070210 and CIP code 111003.

A. Qualifying Students

This Agreement pertains to the transfer of "Qualifying Students", *i.e.*, those students who:
1. Have successfully completed the program at the Sending Institution;
2. Are enrolled in the Sending Institution, in good standing; and
3. Are accepted for admission to the Receiving Institution

B. Responsibilities of the Institutions

The Institutions agree to implement the transfer of Qualifying Students in accordance with applicable law and the following requirements and protocols:

1. A Qualifying Student may transfer from the Transferring Institution into the Receiving Institution for the completion of the Program.

2. Courses that the Receiving School will accept credits for towards completion of the Program include:

Sending Institution Course			**Receiving Institution Comparable Course**			
Course Number	**Course Name**	**Credits**	**Course Number**	**Course Name**	**Credits**	**Applied to***
ENG 101	English Composition	3.0	ENGL 101	First-Year Composition	3.0	Gen. Ed.
MAT 203	Calculus I	4.0	MATH 236	Calculus I	4.0	Gen. Ed. and Major
MAT 204	Calculus II	4.0	MATH 237	Calculus II	4.0	Major
MAT 208	Linear Algebra	4.0	MATH 350	Linear Algebra	3.0	Major
CSC 102	Intro to Information Technology	3.0	COSC 100	Intro to Computer Science	3.0	General elective
CSC 130	Fundamentals of Program Design**	3.0	COSC 101	The Discipline of Computer Science	3.0	Major

CSC 132	Computer Science I**	4.0	COSC 240	Computer Science I	4.0	Major
CSC 134	Intro to JAVA Programming	4.0	COSC 195	Lower-level elective	4.0	General elective
CSC 232	Computer Science II**	4.0	COSC 241	Computer Science II	4.0	Major
CYB 210	Discrete Math**	3.0	COSC 102	Foundations of Computer Science	4.0	Major
BIO 113	Principles of Biology I	4.0	BIOL 149	General Biology I	4.0	Gen. ed. &Major
BIO 114	Principles of Biology II	4.0	BIOL 160	General Zoology	4.0	Major
CHM 103	General Chemistry I	4.0	CHEM 201	General Chemistry I	4.0	Gen. ed. &Major
CHM 104	General Chemistry II	4.0	CHEM 202	General Chemistry II	4.0	Major
PHY 201	General Physics I	4.0	PHYS 261	Principles of Physics I	4.0	Gen. ed. &Major
PHY 202	General Physics II	4.0	PHYS 262	Principles of Physics II	4.0	Major
	TOTAL CREDITS	**60**		**TOTAL CREDITS**	**60**	

**Student must earn a C in the class to be transferred to FSU.

3. The Receiving Institution shall designate, and shall provide to the Sending Institution, the contact information for a staff person at the Receiving Institution who is responsible for the oversight of the transfer of Qualifying Students. The Sending Institution shall designate, and shall provide to the Receiving Institution, the contact information for a staff person at the Sending Institution who is responsible for the oversight of the transfer of Qualifying Students.

	Sending Institution	Receiving Institution
Name of staff person responsible for oversight	Dr. Kathleen J. D'Ambrisi	Dr. Linda Steele
Title of staff person	Dean of Instruction	Transfer and Articulation Coordinator
Email address	kmdambrisi@ccbcmd.edu	lsteele@frostburg.edu
Telephone Number	240-500-2437	301-687-4137

Should the staff person or position change, the institution will promptly provide new contact information to the partner institution and inform the Maryland Higher Education Commission of the change.

Additional contact information:

[Role & Responsibilities of persons listed here]	Sending Institution	Receiving Institution
Name of person	Nancy Arnone	Dr. Michael Flinn
Title of person	Director, Business and Technology	Chair of Computer Science and Information Technologies
Email address	ngarnone@hagerstowncc.edu	mflinn@frostburg.edu
Telephone Number	240-500-2402	301-687-4835

4. If the Qualifying Student is using federal Title 38 VA Education Benefits (GI Bill® Education Benefits), the Institutions shall adhere to all applicable U.S. Department of Veterans Affairs' regulations, including the regulations governing the awarding prior credit, as regulated under Title 38, Code of Federal Regulations, Sections 21.4253(d)(3) and 21.4254(c)(4).

5. Each Institution shall adhere to all applicable transfer requirements set forth in the Annotated Code of Maryland and the Code of Maryland Regulations.

6. Each Institution shall advise students regarding transfer opportunities under this Agreement, and shall advise students of financial aid opportunities and implications associated with the transfer.

7. Should either Institution make changes to program requirements, the institution will inform the partner institution immediately. The articulation agreement should be updated to reflect the changes and forwarded to the Maryland Higher Education Commission.

C. Term and Termination

1. This agreement shall be effective on the date that it is signed by the appropriate and authorized representatives of each Institution and shall remain in effect for one (1) year. This agreement shall automatically renew for one (1) year terms, unless terminated as set forth below.

2. Either Institution may, at its sole discretion, terminate this Agreement upon delivering 60 days written notice to the other Institution and the Maryland Higher Education Commission. The parties agree that termination shall include an agreement that students currently enrolled in the program at the time of termination shall be permitted to complete the program as described herein.

3. Both Institutions agree to meet once every year to review the terms of this agreement.

D. Amendment

1. This Agreement constitutes the entire understanding and agreement of the Institutions with respect to their rights and obligations in carrying out the terms of the Agreement, and supersedes any prior or contemporaneous agreements or understandings.

2. This Agreement may be modified only by written amendment executed by both Institutions.

E. Governing Law

This Agreement shall be governed by, and construed in accordance with, the laws of the State of Maryland.

F. Counterparts

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

G. Notice of Agreement

1. The Institutions agree to provide a copy of this Agreement, with any amendments, to the Maryland Higher Education Commission.

2. The Institutions agree to provide copies of this Agreement to all relevant individuals and departments of the Institutions, including but not limited to students, academic department chairs participating in the transfer, offices of the president, registrar's offices, and financial aid offices.

H. No Third-Party Beneficiaries

There are no third-party beneficiaries to this Agreement.

I. Representations and Warranties of the Parties

Both Institutions represent and warrant that the following shall be true and correct as of the Effective Date of this Agreement, and shall continue to be true and correct during the term of this Agreement:

1. The Institutions are and shall remain in compliance with all applicable federal, state, and local statutes, laws, ordinances, and regulations relating to this Agreement, as amended from time to time.

2. Each Institution has taken all action necessary for the approval and execution of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives.

Hagerstown Community College

By: _____
James S. Klauber, Ph.D.
President

_____
Date

_____
Dawn Schoenenberger
Vice President of Academic
Affairs and Student Services

_____
Date

_____
Kathleen Jordan D'Ambrisi, Ph.D.
Dean of Instruction

_____
Date

Frostburg State University

By: _____
Darlene Smith, Ph.D.
Interim President

_____
Date

_____
Lawrence Weill, Ph.D.
Interim Provost

_____
Date

_____
Sudhir Singh, Ph.D.
Dean of Business, Engineering,
Computational and Mathematical
Sciences

_____
Date

Hagerstown Community College Transfer Guide

FROSTBURG STATE UNIVERSITY

TRANSFER GUIDE | **A.S. in Computer Science** | **B.S. in Computer Science**

This transfer guide is intended for students pursuing an A.S. in Computer Science. It demonstrates how a student can meet both requirements for the associates degree and prepare for a seamless transfer to Frostburg State University's B.S. in Computer Science.

Career Pathway:

This program builds on your passion for technology, starting with an associate's degree, and develops it into a comprehensive foundation for a career in computer science. As you advance into a bachelor's degree at Frostburg State University, you'll gain critical skills in software development, data modeling, pipeline automation, and socket programming. You'll also dive into Agile software development practices, preparing you for dynamic, team-based work environments. This pathway sets you up for a variety of careers in software engineering, system architecture, DevOps, IT consulting, and more. A B.S. in Computer Science will equip you to thrive in the ever-evolving tech landscape.

Frostburg Notes:

Frostburg State University accepts up to 70 credits from community college.

YEAR 1 - COMMUNITY COLLEGE					
FALL	**Frostburg Equivalent**	**CREDITS**	**SPRING**	**Frostburg Equivalent**	**CREDITS**
ENGL 101/101E English Composition	ENGL 101	3	Gen Ed Sci - BIO 113, CHM 103, or PHY 201	GEP Group C	4
MAT 203 Calculus I*	MATH 236	4	CSC 134 Intro to JAVA Programming	COSC 195	4
CSC 130 Fundamentals of Program Design*	COSC 101	3	Gen Ed Diversity	GEP Group F	3
CSC 102 Intro to Info Technology	COSC 100	3	MAT 204 Calculus II	MATH 237	4
Gen Ed Behavioral and Social Science	GEP Group D	3			
TOTAL CREDITS		16	**TOTAL CREDITS**		15

YEAR 2 - COMMUNITY COLLEGE					
FALL	**Frostburg Equivalent**	**CREDITS**	**SPRING**	**Frostburg Equivalent**	**CREDITS**
Gen Ed Sci - BIO 113, CHM 103, or PHY 201	GEP Group C	4	Gen Ed Behavioral/Social Science	GEP Group D	3
CSC 132 Computer Science I*	COSC 240	4	CSC 232 Computer Science II*	COSC 241	4
MAT 208 Linear Algebra	MATH 350	4	Gen Ed Arts/Humanities	GEP Group A or B	3
Gen Ed Arts/Humanities	GEP Group A or B	3	MAT 207 Discrete Math*	COSC 102	3
			CYB 210*	COSC 305 (CS Elective)	3
TOTAL CREDITS		15	**TOTAL CREDITS**		16

YEAR 3 - FROSTBURG STATE UNIVERSITY			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COSC 310 Data Structure and Analysis*	3	COSC 325 Software Engineering*	3
COSC 350 Low-Level Programming*	3	COSC 331 Fundamentals Networking*	3
Second Science - BIOL 2, CHEM 2, or PHYS 2	4	COSC 365 Digital Logic*	4
STCO 102/122 Communication	3	MATH 280/380 Advanced Prob & Stat	3
IDIS 150	3	GEP Group A or B	3
TOTAL CREDITS	16	**TOTAL CREDITS**	16

YEAR 4 - FROSTBURG STATE UNIVERSITY			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COSC 450 Prog. Language Principles*	3	COSC 444 Parallel Computing*	3
COSC 460 Operating Systems *	3	COSC 485 Theory of Computation*	3
Computer Science Elective (2 of 2)*	3	COSC 489 Capstone*	1
ENGL 338 Technical Writing*	3	GEP Group E	3
General Elective**	3	General Elextive**	3
TOTAL CREDITS	15	**TOTAL CREDITS**	13

* = Course, must be completed with a grade of C or better
** = Consult Academic Advisor at Frostburg State University

Academic School Year - 2024-2025