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November 22, 2019

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 modification of the Associate of Applied Science in Computer Technology, Web Development Concentration. The department with support of the program advisory committee and college curriculum committee has revised this Area of Concentration. By adding the introductory course in Approaches to Problem Solving, students may begin this degree program with little to no prior programming experience. Students will also gain knowledge of social media constructs to pair with the programming language. The pairing of the “front end” and “back end” of web development creates a complete skill set known in the industry as full stack skills.

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

Thank you for your time and consideration.

Sincerely,



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



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

Institution Submitting Proposal | Wor-Wic Community College

Each action below requires a separate proposal and cover sheet.

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

Payment  Yes      Payment  R\*STARS      Payment Amount: \$50      Date Submitted: 11/25/2019  
 Submitted:  No      Type:  Check

Department Proposing Program	Technology
Degree Level and Degree Type	Associate of Applied Science
Title of Proposed Program	Computer Technology, Full Stack Web Development Concentration
Total Number of Credits	60
Suggested Codes	HEGIS: 5103.01      CIP: 11.0501
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: 2020
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: [kmallory@worwic.edu](mailto:kmallory@worwic.edu)

President/Chief Executive

Type Name: Dr. Murray K. Hoy  
 Signature:   
 Date: 11/25/19  
 Date of Approval/Endorsement by Governing Board: 12/12/19

Proposed change for fall 2020

*Computer Technology*  
Associate of Applied Science  
*Full Stack Web Development Concentration*  
First Year

<u>Summer II</u>		<u>Credit Hours</u>	<u>Notes</u>
SDV 100	Fundamentals of College Study	1	
 <u>Fall</u>			
BMT 102	Marketing	3	New course
CMP 134	Approaches to Problem Solving	4	New course
CMP 115	Fundamentals of Computer Architecture	4	
*ENG 101	Fundamentals of English I	<u>3</u>	GER English
		14	
 <u>Spring</u>			
*BMT 130	Social Media Marketing	3	New course
*CMP 135	Introduction to Programming	4	
CMP 130	Introduction to Web Development	3	
*ENG 151	Fundamentals of English II	3	GER Art/Hum
*MTH 121	Pre-calculus I	<u>3</u>	GER Math
		16	
 <u>Second Year</u>			
<u>Fall</u>			
*CMP 215	Website Content Management	4	
*CMP 255	Database Design and Management	4	
*COM 200	Interpersonal Communication	3	
*BMT 235	Social Media Planning Seminar	<u>3</u>	New Course
		14	
 <u>Spring</u>			
*CMP 230	Advanced Web Solutions	4	
*CMP 246	Digital Content Management	3	
*CMP 260	Computer Technology Field Experience	2	
GEN ED	Biological/Physical Science Requirement	3-4	GER Bio/Phy
GEN ED	Social/Behavioral Science Requirement	<u>3</u>	GER Soc/Beh
		15	

Student ID: \_\_\_\_\_  
 Student Name: \_\_\_\_\_  
 Advisor Name: \_\_\_\_\_

Catalog: 2019-2020 Catalog  
 Program: Computer Technology, Web Development  
 Concentration, A.A.S.

## Computer Technology, Web Development Concentration, A.A.S.

Program Code: CMP.AAS.CWD

This program focuses on developing web-based applications, designing and interacting with databases, and building communication skills needed to collaborate with cross-functional teams.

### First Year

#### Summer II

Course Name	Term Taken	Grade
SDV 100 - Fundamentals of College Study (1 Credit)		

#### Fall

Course Name	Term Taken	Grade
CMP 104 - Introduction to Programming (4 Credits)		
CMP 115 - Fundamentals of Computer Architecture (4 Credits)		
ENG 101 - Fundamentals of English I (3 Credits) *		
GEN ED - Mathematics Requirement (3-4 Credits) *		

#### Spring

Course Name	Term Taken	Grade
CMP 120 - Introduction to Linux (2 Credits) *		
CMP 130 - Introduction to Web Development (3 Credits)		
CMP 150 - Introduction to Networking (4 Credits) *		
COM 200 - Interpersonal Communication (3 Credits) *		
ENG 151 - Fundamentals of English II (3 Credits) *		

### Second Year

#### Fall

Course Name	Term Taken	Grade
CMP 210 - Programming Structures and Applications (4 Credits) *		
CMP 215 - Website Content Management (4 Credits) *		
CMP 245 - Computer and Network Security (3 Credits) *		
CMP 255 - Database Design and Management (4 Credits) *		

#### Spring

Course Name	Term Taken	Grade
CMP 230 - Advanced Web Solutions (4 Credits) *		
CMP 246 - Digital Content Management (3 Credits) *		
GEN ED - Biological/Physical Science Requirement (3-4 Credits)		
CMP 260 - Computer Technology Field Experience (2 Credits) *		
GEN ED - Social/Behavioral Science Requirement (3 Credits)		

### Symbol(s)

\* This course has a prerequisite.

### Learning Outcomes

Graduates of this program should be able to:

1. Use technology for information, research and problem solving;
2. Apply web development techniques to create, organize and style appropriate content;
3. Apply best practices to design, build and implement database solutions for home, business and industry applications; and
4. Apply best practices to design, build and implement web solutions for home, business and industrial applications.

### Notes:

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

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

This application is for the purpose of changing the content of the current web development area of concentration within the computer studies AAS to better serve our students. Modifying the existing program into Full Stack Web Development concentration will prepare students to enter the workforce nation-wide as a full-stack web developer. While attending, Wor-Wic students will learn full-stack web development including; Problem Solving, HTML/CSS, Content Management, Business, Marketing, and social media. The student will also take relevant general education courses.

The proposed program relates to the college's mission of "... providing affordable, high quality instruction for postsecondary credit programs and continuing education in a technology-driven environment." The Full Stack Web Development concentration will allow students an affordable high-quality education in a highly technical discipline and supporting environment. Further, the offering of this will allow local students the opportunity to enter the workforce as either a full stack web developer.

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

The proposed area of concentration directly supports the following strategic priorities for the college:

1. Provide service area residents with access to quality education and training at a reasonable cost.

Currently, there are no local colleges that offer a Full-Stack Web Development program. The proposed area of concentration will provide local area residents with access to a low-cost option to earn an associate's degree in preparation for a technical career.

2. Offer courses and programs to prepare students for entry into the workforce, career advancement, licensure, certification, transfer to four-year colleges and universities, and personal development.

The Full Stack Web Development concentration will allow students to transition from high school to a two-year school and prepare them for a career in full stack web development.

3. Partner with local high schools and universities to facilitate seamless transitions through multiple levels of education.

Teachers and administrators at local high schools are excited about the proposed Full Stack Web Development program. If the program is approved they are looking forward to recommending the program to their students. Various aspects of computer study are the fastest growing occupational programs in secondary systems.

### **A.3. Funding for first five years**

The institutional operational budget will supply the financial support for the Full Stack Web Development program instruction.

### **A.4. Institutional Commitment**

Wor-Wic Community College is committed to the development and full implementation of the Full Stack Web Development program. The objectives of the Full Stack Web Development program support the college mission and goals. Wor-Wic outlines seven specific college goals. The Full Stack Web Development program supports goals 2 and 7 as identified on the college website:

*College goal 2: "Offer courses and programs to prepare students for entry into the workforce, career advancement, licensure, certification, transfer to four-year colleges and universities, and personal development."* Students completing the Full Stack Web Development program have the ability to enter the workforce as a Full Stack Web Developer.

*College goal 7: "Acquire appropriate human, financial and technological resources to meet institutional needs."* Through the institutional budgetary process, the college is dedicated to providing sufficient financial resources necessary to support the Full Stack Web Development program from conception to full implementation.

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

### **B.1**

Full Stack Web Development Concentration, A.A.S. meets Strategy 7 of the Maryland State Plan for Postsecondary Education: "Enhance career advising and planning services and integrate them explicitly into academic advising and planning." While web development would clearly be a career field of interest to students already decided on a career based on computer technology, undecided students who are looking for a program that utilizes creative thinking and design could be introduced to the program through career and academic advising.

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

### **C.1. 1. Employment opportunities**

A concentration in full stack web development gives students the necessary foundation to be successful website and webpage developers. Websites are an invaluable tool for business and organizations as they link with customers and clients that serve to streamline access to information, the information process, centralize and simplify online business activities, and increase exposure through social media, electronic marketing and web searches. 420 new jobs are expected to be added annually within this field in the state of Maryland (Long Term Occupational Projections 2016-2026).

## **C.2. Data analysis projecting market demand and C.3. Educational and training needs over the next 5 years**

Job growth within this sector is expected to be positive over the next seven years. The anticipated growth rate of 7.7% exceeds national averages of the 5% overall job growth rate across all job categories (Long Term Occupational Projections 2016-2026). Websites are no longer optional for industry and service sectors. A strong background in technology and computer science is the basis of this field, but it has the added benefit of offering opportunities to foster creative endeavors which broadens the appeal to students with a variety of interests.

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

Currently, there are 18 Web Development students in the college. After implementation of the revised concentration there will be approximately 10-18 graduates per year that are prepared to enter the workforce as a Full Stack Web Developer.

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

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

There are no comparable two-year programs in the college coverage area.

### **D.2. Justification for Proposed Program**

This is a change to a currently existing program. The program is modifying the current web development track to make it more accessible for students and to prepare them to enter the work force with a highly desirable skill set. The changes to the degree include adding business courses and social media courses to make our students well rounded and ready to enter the business world as a Full Stack Web Developer.

After graduation with a two-year degree in Full Stack Web Development, students have the option to work nearly anywhere in the country either as a freelance Full Stack Web Developer or for a company that specializes in web development. Locally, there are two large companies that hire web developers, D3 Corporation and Matice Interactive.

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

This program is not a transfer program and has no impact on high demand programs at the state's HCBU's

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

This program is not a transfer program and has no impact on high demand programs at the state's HCBU's

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

### **G.1. Describe how the program was established and the faculty who will oversee the program.**

The Full Stack Web Development program was established by examining industry needs and establishing a two-year program that will allow students to gain the skills they need at Wor-Wic to enter the workforce as a Full Stack Web Developer. Mike Kelley, Assistant Professor of Computer Studies and Curtis Satterfield, Technology Department Head and Associate Professor of Computer Studies will oversee the program.

## **G.2. Educational Objectives and Student Learning Outcomes:**

Graduates of the Full Stack Web Development concentration will be able to:

1. Use technology for information, research and problem solving;
2. Apply web development techniques to create, organize and style appropriate content;
3. Apply best practices to design, build and implement database solutions for home, business and industry applications; and
4. Apply best practices to design, build and implement web solutions for home, business and industrial applications.

Student Learning Outcomes:

1. Students will be able to apply principles of reading, writing, information literacy, quantitative literacy, and critical thinking to analyze complex problems.
2. Students will be able to analyze and apply best practices to ethical issues in the industry.
3. Students will be able to identify their strengths and be able to choose a career path within the Information Technology industry.

## **G.3. Assessment**

### **a. Student Learning Outcomes**

The college requires continual assessment of programs, courses, and faculty as set forth by their policies and procedures. Benchmarks are set on a program and course level basis. Courses are evaluated yearly to identify any learning objectives that are not being met. The standard benchmark for the school is 70% pass rate by objective on final exams. If a course is identified as failing to meet this benchmark on one or more objectives, appropriate corrective action is taken by the course coordinators and department heads. Action plans are created and updated at the six-month and one-year marks to ensure the benchmarks have improved. This serves as both assessment of a course and student learning outcomes for the course.

Faculty participate in a yearly evaluation process to address any issues at both the personnel level and the teaching level. Faculty must submit both a plan of instruction, writing assignment, and personal narrative explaining their accomplishments over the prior year. Student opinion of learning survey data is incorporated into the faculty's evaluation. The scores are presented to the faculty department heads who send recommendations of contract renewal to the appropriate dean.



**b. Program Learning Outcomes**

As part of the institution's assessment plan, all courses and programs have an annual review to ensure that educational objectives and student learning outcomes are being met. The department head writes an end-of-year report that explains the assessment measures, outcomes, and any action plans that have been created in the event that courses are not meeting benchmarks. In addition, the college has a five-year program review cycle that examines the progress of the program over the previous five years. These annual and five-year evaluations are used to identify progress of the program and ensure that any issues are addressed via action plans and quarterly updates.

**G.4. Course list including title, credit hours, and course descriptions:**

*Computer Technology*  
Associate of Applied Science  
*Full Stack Web Development Concentration*  
First Year

<u>Summer II</u>		<u>Credit Hours</u>
SDV 100	Fundamentals of College Study	1
<u>Fall</u>		
BMT 102	Marketing	3
CMP 134	Approaches to Problem Solving	4
CMP 115	Fundamentals of Computer Architecture	4
*ENG 101	Fundamentals of English I	<u>3</u>
		14
<u>Spring</u>		
*BMT 130	Social Media Marketing	3
*CMP 135	Introduction to Programming	4
CMP 130	Introduction to Web Development	3
*ENG 151	Fundamentals of English II	3
*MTH 121	Pre-calculus I	<u>3</u>
		16
<u>Second Year</u>		
<u>Fall</u>		
*CMP 215	Website Content Management	4
*CMP 255	Database Design and Management	4
*COM 200	Interpersonal Communication	3
*BMT 235	Social Media Planning Seminar	<u>3</u>
		14
<u>Spring</u>		
*CMP 230	Advanced Web Solutions	4
*CMP 246	Digital Content Management	3
*CMP 260	Computer Technology Field Experience	2
GEN ED	Biological/Physical Science Requirement	3-4
GEN ED	Social/Behavioral Science Requirement	<u>3</u>
		15
*Requires Prerequisite		Total: 60

## Computer Courses:

### CMP 115 – Fundamentals of Computer Architecture

This course covers the basic organization and design of computers. Topics include the organization and function of central processing units (CPUs), memory, bus structures, input/output devices, operating systems, application software and networks. Lecture Hours: 39. Laboratory Hours: 26. Laboratory Fee: \$25. Usually offered in the fall and spring semesters.

### CMP 134 – Approaches to Problem Solving – 4 Credits

This course provides students with a firm foundation in problem-solving approaches in computer programming while facilitating the development of good structured programming skills for solving typical programming problems and applying them to real world problems. Students will define and analyze problems, design computer solution algorithms and prove the correctness of the solution. Lecture Hours: 26. Laboratory Hours: 26. Laboratory Fee: \$15. This course is usually offered in the fall and spring semesters.

### CMP 135 – Introduction to Programming – 4 Credits

This course introduces students to the basic principles of programming, object-oriented concepts, and terminology. Using an industry-appropriate and current programming language, students are introduced to the concepts of decision, repetition, objects, classes, inheritance and polymorphism. Prerequisite CMP-102 or MTH-099 with grade of “C” or better or permission of the department head.

### CMP 130 – Introduction to Web Development – 3 Credits

This course covers the principles of creating hypertext markup language (HTML) for webpages and the elements used to create them. Cascading style sheets (CSS) are introduced to add style to webpages and to create enhanced visual effects. Responsive formatting techniques are introduced to make the site adaptable. This course covers the fundamental elements needed to create webpages. Students design and build a website using current technology. Lecture Hours: 26. Laboratory Hours: 26. Laboratory Fee: \$25. Usually offered in the fall and spring.

### CMP 215 – Website Content Management – 4 Credits

This course builds on CMP 130 to further expand student skills in hypertext markup language (HTML) and cascading style sheets (CSS). Students are also introduced to web scripting for website enhancements, a current content management system (CMS) for managing content, and developing and customizing a website. Image editing for the web is used for creating graphics for websites. Lecture Hours: 26. Laboratory Hours: 52. Prerequisite(s): CMP 104 and CMP 130, or permission of the department head. Laboratory Fee: \$25. Usually offered in the fall.

### CMP 255 – Database Design and Management – 4 Credits

This course emphasizes database interaction with Structured Query Language (SQL) and MySQL, the fundamentals of programming with databases, application techniques and security – skills that are the foundation to managing database-backed websites or any relational database application. Students gain practical experience in the laboratory through a database application language. Lecture Hours: 26. Laboratory Hours: 52. Prerequisite(s): CMP 104 and CMP 130 or permission of the department head. Laboratory Fee: \$25. Usually offered in the fall.

### CMP 230 – Advanced Web Solutions – 4 Credits

This course covers advanced topics in web development. Custom website functionality, such as plugins and/or widgets, is covered. Using a web-based programming language and database concepts, students create web applications that increase website functionality and satisfy business requirements. Lecture Hours: 26. Laboratory Hours: 52. Prerequisite(s): CMP 215. Laboratory Fee: \$25. Usually offered in the spring.

### CMP 246 – Digital Content Management – 3 Credits

This course provides an opportunity for students to examine social networks, social media and online advertising techniques for improving web presence. Students also explore technical and creative elements to create organic search engine optimization (SEO) to improve ranking, drive traffic and increase awareness in search engines. Students identify web-based marketing opportunities and recommend an appropriate web-based management strategy. Lecture Hours: 39. Prerequisite(s): CMP 130 or permission of the department head. Usually offered in the spring.

### CMP 260 – Computer Technology Field Experience

In order to obtain an actual training experience, the student secures or is placed in an approved position relevant to his or her area of emphasis. The student is required to develop, in cooperation with the instructor and field supervisor, a learning contract for the field experience. Supervision and grading of the training experience are provided by both the instructor and the field supervisor. Field Experience Hours: 100. Prerequisite(s): CMP 245 or CMP 255 and permission of the department head. Usually offered in the fall, spring and summer.

### BMT 102 – Marketing – 3 Credits

This course covers the various activities that are required for businesses to successfully develop their products and services, bring them to the consumer, encourage sales and secure earnings. Students analyze marketing situations and recommend an appropriate marketing strategy. Lecture Hours: 39. Usually offered in the fall and spring.

### BMT 130 – Social Media Marketing – 3 Credits

This course explores various activities related to social media marketing, including target market identification, identifying appropriate marketing strategies, analyzing performance metrics and using tools to manage and monitor social media activity.

Lecture Hours: 39. Prerequisite(s): BMT 102 with a grade of “C” or better or permission of the department head. Usually offered in the spring.

#### BMT 235 – Social Media Planning Seminar – 3 Credits

Working in teams, students participate in a semester-long case study designed to provide practical experience in auditing an online marketing effort and developing recommendations based on key findings. Students demonstrate proficiency in various areas of social media marketing planning, including conducting a marketing SWOT analysis and creating a social media marketing plan, budget and ROI analysis. Lecture Hours: 39. Prerequisite(s): BMT 130 with a grade of “C” or better or permission of the department head. Usually offered in the fall.

#### **General Education Courses:**

#### SDV-100 – Fundamentals of College Study I – 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 semesters.

#### 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. Usually offered in the fall.*

#### ENG 101 – Fundamentals of English I – 3 Credits (English requirement)

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. Prerequisites: 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 semesters.

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

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: ENG 101 with a grade of “C” or better. Usually offered in the fall, spring and summer semesters.

#### MTH 121 – Precalculus I – 3 Credits

This course covers the advanced algebra necessary to prepare students for the study of calculus. Topics include solving, graphing and modeling with linear, quadratic, polynomial, rational, radical, exponential, logarithmic equations and inequalities. Basic conic sections, matrices and linear programming topics are also included. Lecture Hours: 39. Prerequisite(s): MTH 099 with a grade of “C” or better or an acceptable mathematics placement test score. Usually offered in the fall and spring semesters.

#### GEN ED – Behavioral Social Science requirement – 3 Credits

Choose from ECO 151 – Principles of Macroeconomics, ECO 201 – Principles of Microeconomics, GEO 102 – Human Geography, POL 101 – American Government, PSY 101 – Intro to Psychology, PSY 201 – Human Relations, or SOC 101 – Introduction to Sociology

#### GEN ED – Biological/Physical Science Requirement – 4 Credits

Choose From: BIO 101 – Fundamentals of Biology, CHM 101 – General Chemistry I, ENV 101 – Environmental Science, GEO 101 – Earth and Space Science, or PHY 104 – Physical Science

### **G.5. General Education requirements:**

For an associate of applied sciences (AAS) degree, 18 hours of general education credits are required. The program will meet these requirements through a variety of specific course requirements as well as electives within multiple disciplines. The total of general education credits in the Full Stack Web Development concentration equals 18 credits which meets the minimum for an associate of applied sciences degree. Listed in section G.4. above, are all general education courses to satisfy the degree requirements.

### **G.6. Specialized Accreditation**

There are no specialized accreditation or graduate certificate requirements for this program.

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

N/A

**G.8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning**

**management system, availability of academic support services and financial aid resources, and costs and payment policies.**

All programs and requirements for program completion at Wor-Wic are explained and outlined in the college’s catalog. Each degree or certificate has a clear outline of the courses required to complete the degree. In addition, all courses have description in the catalog that explains the course, the semesters (fall, spring, or summer) when the course is offered, fees, and any prerequisites. The catalog is accessible through the college’s website and both current and prospective students can view the requirements for any degree. Further, current students have access to an online portal that shows what courses they have taken and what courses they still need to take in order to complete their degree. The college also requires all students to take SDV 100 Introduction to College Study. This course covers topics such as meeting with your faculty advisor, how to plan courses on the student’s schedule, necessary skills for taking online courses, overview of the Blackboard LMS, and the help that Student Services can provide to students. When the student registers for classes, they apply on the website which outlines the process and also explains the opportunity to apply for financial aid. When a student registers for courses, they are informed about the cost and payment policies.

## **H. Adequacy of Articulation**

Wor-Wic currently has articulation agreements with all secondary school systems in its coverage area as well as others where there are no applicable state programs available. These agreements are reviewed, improved, and updated on an annual basis through a meeting hosted by the college. The meeting is attended by Wor-Wic department chairs and faculty as well as secondary instructors who are involved in related classes. From this meeting, articulated class lists are approved by the necessary executives and re-published annually for secondary system, student, parent, faculty and advisor use.

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

### **I.1 Faculty Summary**

Current computer studies programs comprise a transfer degree and an occupational degree with two concentrations as well as two additional certificates. Dedicated faculty resources consist of three full-time faculty with any part-time faculty contracted as needed. The current faculty consists of; Mike Kelley assistant professor of computer studies, and Lucinda Stanley, Professor of business. The following table shows faculty rank, terminal degree, and courses that they will teach in the new program.

<b>Faculty Member</b>	<b>Faculty Rank</b>	<b>Degrees</b>	<b>Work Experience</b>	<b>Full or Part-time</b>	<b>Courses Taught</b>
Michael Kelley	Assistant Professor	B.S. Information Systems Management  M.S. Information Systems Web	Over 15 years of industry experience in hardware, networking, and	Full-time	CMP 130 Introduction to Web Development (3) CMP 134 Approaches to

		Development Concentration (In progress)  Expected completion date December 2020. See below for completed coursework*	web development		Problem Solving (4) CMP 135 Intro to Programming (4) CMP 215 Website Content Management (3) CMP 230 Advanced Web Solutions (4) CMP 246 Digital Content Management (3) CMP 260 Computer Technology Field Experience (2)
Lucinda Stanley	Professor	Ph.D., Capella University Instructional Design and Online Technology  M.S., Emporia State University Instructional Design and Technology  M.S., Emporia State University Business Education  B.S., Regis University Business Administration		Full-Time	BMT 102 Marketing (3) BMT 130 Social Media Marketing (3) BMT 235 Social Media Planning Seminar (3)

\*Mike Kelley completed Master's courses:

- IST 7000 - Data Management (3 credits)
- IST 7020 - Analysis, Modeling, and Design (3 credits)
- IST 7060 - Project and Change Management (3 credits)
- IST 7040 - Data Communications and Networking (3 credits)
- IST 7100 - IT Policy and Strategy (3 credits)
- DSN 6000 - Web Design and Architecture (3 credits)
- DSN 6040 - Web Design with JavaScript (3 credits)
- DSN 6070 - Web Design with Visual Basic (3 credits)
- DSN 6050 - Markup Languages Advanced Authoring (3 credits)



Mike Kelley has been working in the IT industry for over 20 years. During this time, he has run his own business supporting local governments with networking and hardware support services. He has also worked as a systems administrator for local governments. His latest experience is web development both at a private company and now as a freelance web developer.

The current staffing levels are considered sufficient to support the requested addition of the new concentration. No additional faculty resources are anticipated for this program.

## **I.2. Ongoing pedagogy training for faculty**

### **a. Pedagogy that meets the needs of the students**

Each year the college has an annual professional development day for faculty that includes training on pedagogical effectiveness. Training is also offered in dealing with special needs students and teaching to diverse student populations.

### **b. The learning management system**

The college requires that all instructors use Blackboard's grade book for their classes and all faculty are required to complete first level training for Blackboard. For online instructors, two higher levels of training are required to be certified to teach an online or hybrid course. The college provides several LMS training sessions each year to support the faculty.

### **c. Evidenced-based best practices for distance education, if distance education is offered.**

The college follows the Quality Matters method of evaluating and assessing online courses. Each year the department head is required to assess each online course in their department and then those courses are peer-reviewed as well. Training for the LMS is offered year-round for faculty and department heads.

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

Students in the Full Stack Web Development concentration will have ready access to a supply of current and relevant books, journals, periodicals, computers, software, and other reference materials needed to meet the requirements of the curriculum. The program budget allocates funding for specific reference materials. Wor-Wic uses an electronic library that supports the academic needs of constituents. Multiple media centers are staffed to provide research assistance. Web-delivered subscription databases cover academic disciplines, including computer studies. Wor-Wic students also have privileges for the libraries at University of Maryland Eastern Shore and Salisbury University.

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

## K.1. Physical facilities, infrastructure, and instructional equipment

The computer studies department facilitates two labs with four separate, physical areas: a fully racked and secured server room; two separate classrooms equipped with high-end desktop computers; and a “work bench” laboratory space allowing physical work to be done on computers and related equipment. The network capability is fully functional both internally to the classroom and college resources, as well as suitably isolated to allow system/security work to be done without putting college-wide resources at risk. All equipment is of high quality. Current technologies are fully implemented and sufficient. Each full-time instructor for the program has their own office. The current infrastructure and equipment, as described, are more than adequate to support the proposed concentration in Full Stack Web Development.

## K.2. Distance Education Assurances

The college provides every student with a free email account on the worwic.edu domain. The college also utilizes the Blackboard Learning Management system and is fully supported by IT staff and an instructional technologist. All students who enroll in distance education courses are required to take a mandatory Blackboard tutorial with assessment before gaining access to online course materials.

## L. Adequacy of Financial Resources.

### L.1. Table 1 – Resources and Narrative Rationale

Table 1 explains the financial resources for the Full Stack Web Development program. The budget allocations are based on current enrollments in the program. After revision of the program an initial enrollment of 18 students in the revised program is expected. Based on historical data, the college anticipates an initial enrollment of approximately 18 students with an increase of 2-3 students per year as demonstrated in the table below. The identified credit hour rate estimates an approximate 3% increase during the projected five-year budget plan.

TABLE 1: RESOURCES					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	53200	54416	55328	56240	57152
a. Number of F/T students	18	20	23	25	27
b. Annual tuition/fee rate	3325	3401	3458	3515	3572
c. Total F/T revenue (a * b)	59850	68020	79534	87875	96444
d. Number of P/T students	0	0	0	0	0
e. Credit hour rate	116	120	123	126	129
f. Annual credit hour	19	19	19	19	19
g. Total P/T revenue (d * e * f)	0	0	0	0	0
3. Grants, Contracts & other external sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	59850	68020	79534	87875	96444

## L.2. Table 2 – Program Expenditures and Narrative Rationale

Table 2 demonstrates the Full Stack Web Development program expenditures. The current full-time faculty member and full-time business faculty member will be teaching the courses and no new faculty will be necessary. Additionally, no new equipment is needed for this program. The college will not accrue any significant expenses because new equipment purchase is not required for this program.

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

Since this application covers the revamp of the current degree program's area of concentration, the college and program are sufficiently resourced to support the changes. The related computer programs that are currently offered are supported by the college's annual operational funding. No additional financial resources are required beyond current levels to implement this proposal.

## M. Adequacy of provisions for evaluation of program

### M.1. Evaluation Procedures – Courses, Faculty, Student Learning Outcomes

The college requires continual assessment of programs, courses, and faculty as set forth by their policies and procedures. Benchmarks are set on a program and course level basis. Courses are evaluated yearly to identify any learning objectives that are not being met. The standard benchmark for the school is 70% pass rate by objective on final exams. If a course is identified as failing to meet this benchmark on one or more objectives, appropriate corrective action is taken by the course coordinators and department heads. Action plans are created and updated at the six-month and one-year marks to ensure the

benchmarks have improved. This serves as both assessment of a course and student learning outcomes for the course.

Faculty participate in a yearly evaluation process to address any issues at both the personnel level and the teaching level. Faculty must submit both a plan of instruction, writing assignment, and personal narrative explaining their accomplishments over the prior year. Student opinion of learning survey data is incorporated into the faculty's evaluation. The scores are presented to the faculty department heads who send recommendations of contract renewal to the appropriate dean.

## **M.2. Evaluation of Proposed Program's Effectiveness**

As part of the institution's assessment plan, all courses and programs have an annual review to ensure that educational objectives and student learning outcomes are being met. The department head writes an end-of-year report that explains the assessment measures, outcomes, and any action plans that have been created in the event that courses are not meeting benchmarks. In addition, the college has a five-year program review cycle that examines the progress of the program over the previous five years. These annual and five-year evaluations are used to identify progress of the program and ensure that any issues are addressed via action plans and quarterly updates.

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

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

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

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

Additionally, each year Wor-Wic produces a cultural diversity report in compliance with the Maryland Higher Education Commission reporting requirements for college cultural diversity plans [Education Article, Annotated Code of Maryland 11-406-(b) (1) (iii)]. The report describes the set of initiatives and achievements accomplished in support of the diversity plan for each year.

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

N/A

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

Courses for this program will be offered through both distance education and face-to-face. While not currently a member of C-RAC, the College complies with each of the guidelines through appropriate policies and practices. Middle States Commission on Higher Education and MHEC has approved Wor-Wic Community College to offer distance education programs.