



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

Institution Submitting Proposal	
---------------------------------	--

Each action below requires a separate proposal and cover sheet.

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

Payment Submitted:	Yes	Payment Type:	R*STARS # Check #	Payment Amount:	Date Submitted:
Department Proposing Program					
Degree Level and Degree Type					
Title of Proposed Program					
Total Number of Credits					
Suggested Codes			HEGIS:	CIP:	
Program Modality			On-campus	Distance Education (fully online)	Both
Program Resources			Using Existing Resources	Requiring New Resources	
Projected Implementation Date <small>(must be 60 days from proposal submission as per COMAR 13B.02.03.03)</small>			Fall	Spring	Summer Year:
Provide Link to Most Recent Academic Catalog			URL:		

Preferred Contact for this Proposal	Name:
	Title:
	Phone:
	Email:

President/Chief Executive	Type Name:
	Signature: <i>Jalecia Williams</i> Date:
Date of Approval/Endorsement by Governing Board:	



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

December 15, 2024

Dear Dr. Rai,

Prince George's Community College is requesting substantial modifications to the **Web Technology Certificate** program (HEGIS 5199.05; CIP 11.0801). The following changes were made to align with the Information Technology, A.A.S. degree, and to better prepare students for the workplace:

- Added INT-2130 Programming in C++ (Credits: 3; Program Elective);
- Added INT-2240 Introduction to Python (Credits: 3; Program Elective);
- The total number of credits for the certificate program remains at 18

OLD Program Requirements and Electives	Credits	Removed, Changed, or Added	NEW Program Requirements and Electives	Credits
INT-1010 Introduction to Information Technology (Program Requirement)	3		INT-1010 Introduction to Information Technology (Program Requirement)	3
INT-1800 Internet and Web Technology (Program Requirement)	3		INT-1800 Internet and Web Technology (Program Requirement)	3
INT-1111 Programming Logic and Design (Program Requirement)	3		INT-1111 Programming Logic and Design (Program Requirement)	3
INT-1850 Client-Side Web Development (Program Requirement)	3		INT-1850 Client-Side Web Development (Program Requirement)	3
		Added INT-2130 Programming in C++ (Program Elective)	INT-2130 Programming in C++ (Program Elective)	3



PRINCE GEORGE'S
COMMUNITY COLLEGE

pgcc.edu

INT-2200 Programming in Java (Program Elective)	3		INT-2200 Programming in Java (Program Elective)	3
		Added INT-2240 Introduction to Python (Program Elective)	INT-2240 Introduction to Python (Program Elective)	3
INT-2850 Server-Side Web Development (Program Requirement)	3		INT-2850 Server-Side Web Development (Program Requirement)	3
Total OLD Program Requirements and Electives	18	Total credits changed: 6	Total New Program Requirements and Electives	18

Prince George's Community College's Curriculum Committee approved these revisions. A payment of fifty dollars (\$50) was mailed to MHEC to cover the substantial modification to a certificate program fee. Please feel free to contact me with any questions.

Respectfully,

Dr. Clayton Railey
EVP and Provost of Teaching, Learning, and Student Success
Prince George's Community College
301 Largo Rd
Largo, MD 20774
301-546-0406
raileyrca@pgcc.edu

**NEW ACADEMIC DEGREE PROGRAMS, NEW STANDALONE CERTIFICATE PROGRAMS, AND
SUBSTANTIAL MODIFICATIONS TEMPLATE**

1. **Name of Program:** Web Technology Certificate
2. **Type of Proposal:** Substantial Modification

PART A: Centrality to Institutional and Planning Priorities

1. Provide a **description of the program**, including each area of concentration (if applicable), and how it **relates** to the institution's approved **mission**.

For more information: [PGCC Mission Statement](#).

Prince George's Community College is proposing substantial modifications to update the 18-credit certificate program in Web Technology. This program currently resides in the Technology, Engineering, and Construction Department, and the Sciences, Technology, Engineering, and Mathematics (STEM) Division, as part of our Technology Guided Pathway.

In the Web Technology Certificate program, students learn to use various Internet and World Wide Web-based environments and technologies in the web development industry. Students learn to apply logic to analyze, design, and program using web programming languages. Students utilize file management and information technology tools as well as learn how to design and maintain a professional website that includes professional digital communication. Additionally, students use client- and server-side programming languages and applications and learn object-oriented programming concepts through robust hands-on practice. The Web Technology Certificate prepares students for positions as web developer, web designer, web content manager, and web programmer. All of the courses in this certificate can be applied to the Information Technology A.A.S. degree program.

The program supports PGCC's mission, which is to provide high-quality, transformative learning experiences that enrich lives and empower students to earn credentials leading to personal development, professional advancement, and economic prosperity. The Web Technology Certificate program is committed to quality through curriculum and workforce alignment, program assessment, faculty evaluations, and student feedback through evaluations. It has the power to be transformative by leading to lucrative jobs for our graduates; and by creating a highly skilled, credentialed workforce for the community.

2. Explain how the proposed program **supports** the institution's **strategic goals** and provide **evidence that affirms** it is an institutional **priority**.

For more information: [FY2022-2025 Strategic Plan](#) and [Vision 2030 Strategic Imperatives](#)

PGCC's vision statement states that the College seeks to be the region's premier center for dynamic teaching and learning, strategic partnerships, and community engagement that advances knowledge, economic equity, and lifelong personal development. The vision is supported through the

implementation of academic programs that provide affordable, high-quality learning experiences that lead to well-paying jobs for our graduates as well as a trained workforce for the technology industry in the region. Student success is the underlying foundation of all planning at Prince George's Community College.

The 2022-2025 PGCC Strategic Plan linked above includes strategic goals that shape the future of the College with objectives and outcomes to measure success, and the thoughtful strategies outlined to achieve those goals.

The Web Technology Certificate program aligns closely with the following College strategic goals, as evidence that it aligns with institutional priorities:

Goal 2: Optimize Pathways to Graduation, Transfer, or Entering the Workforce.

Strategy: Align degrees, certificates, credentials, and curriculum development to career pathways and industry sectors congruent with high-wage, high-demand occupations.

As part of the Technology Guided Pathway, graduates of the Web Technology Certificate program are prepared for entry-level positions in a variety of technology fields and professional opportunities, including positions as Web Administrator and Web Developer for a variety of public and private companies. This program also aligns with the Vision 2030 Strategic Imperative of enabling 50,000 workers to earn a workforce credential aligned to high-skill, high-wage jobs.

Goal 4: Reimagine Workforce Innovations and Strategic Partnerships

Strategy: Create and embed opportunities for students to complete marketable workforce experiences and earn reputable credentials synchronously with the completion of a certificate or degree.

The program courses in the Web Technology Certificate program prepare students for in-demand industry credentials. Additionally, some courses in the program are cross-listed, offering flexibility to students seeking credentials either for college credit or through continuing education. Students can apply all completed courses to the Information Technology, A.A.S. degree program.

3. Provide a brief narrative of how the proposed program will be adequately **funded** for at least the first five years of program implementation. (Additional related information is required in section L.)

All costs of this revised program will be funded through the annual operating budget for Teaching, Learning, and Student Success. This revised program will not require any additional expenditures outside those that are offset by increased tuition revenue from projected enrollment in the program (details are provided in Part L – Table 1). There are no new costs for equipment, instructional supplies, facilities, or staff. The program as is proposed can be fully staffed with both current full-time and adjunct faculty and staff to support its operations. Additional faculty may be hired as necessitated by growth in enrollment. Since this will be an embedded certificate, those faculty would teach the same courses in the Information Technology, A.A.S. degree program.

4. Provide a description of the **institution's commitment** to:

a. ongoing administrative, financial, and technical support of the proposed program

The proposed revisions to the Web Technology Certificate program have the necessary support at the department, division, and institutional level to operate successfully. The Technology, Engineering, and Construction department that currently houses the certificate is well-established at PGCC, with an existing cadre of full-time tenured/tenure-track faculty, as well as qualified adjunct faculty, available to teach the program courses (see the table in Part I for a full listing of faculty), and administrative support personnel.

As outlined in Parts K and L, PGCC is confident that the existing administrative and technical supports and physical facilities available to the department and college as a whole are sufficient to ensure the program's viability – the department is not seeking any capital investments or specialized facilities, since current classroom/office space in the Center for Advanced Technology (CAT) will suffice, nor is it seeking any additional administrative positions or technology supports to successfully deliver the program. At the college level, E-Learning Services and our Technology Help Desk can provide comprehensive technical assistance to faculty and students.

b. continuation of the program for a period of time sufficient to allow enrolled students to complete the program.

The program implementation is long-term, with a tenured/tenure-track faculty dedicated to the ongoing course offerings to ensure students can complete the certificate within a reasonable time frame. The college is committed to student success and will provide all enrolled students with the necessary courses and resources (such as advisors to guide students through the program) so they can graduate on schedule.

PART B: Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

1. Demonstrate **demand and need** for the program in terms of meeting **present and future** needs of the region and the State in general based on one or more of the following:

a. The need for the advancement and evolution of knowledge

b. Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education

c. The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs.

There is both demand and need for the Web Technology Certificate program in terms of meeting the present and future needs of the region and the State in general based upon the following, as related to the State Plan:

b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education

Prince George's Community College is a minority-serving institution. According to the U.S. Census Bureau, as of 2022, about 64% of Prince George's County residents identify as Black and approximately

21% as Hispanic. The Web Technology Certificate program allows the College to expand the opportunities available to its service population by providing a program of study that provides students with skills that translate to lucrative and in-demand jobs.

c) The need to strengthen and expand the capacity of historically black institutions to provide high-quality and unique educational programs

Prince George's Community College is a Predominantly Black Institution (PBI), and has received federal grant funds from the U.S. Department of Education to expand opportunities for Black students. The purpose of the federal PBI grants awarded to PGCC is to enable the College to plan, develop, undertake, and implement programs to enhance our capacity to serve more low- and middle-income Black American students; expand higher education opportunities for eligible students by encouraging college preparation and student persistence in secondary school and postsecondary education; and strengthen the financial ability of the institution to serve the academic needs of their students. The Web Technology Certificate program complements the College's expanding list of high quality and unique educational programs that meet the needs of our county and region.

2. Provide evidence that the perceived need is consistent with the [Maryland State Plan for Postsecondary Education](#).

The proposed revisions to this program are well-aligned with the 2022 Maryland State Plan for Higher Education, which outlines three primary goals for the postsecondary community in Maryland:

Student Access: Ensure equitable access to affordable and high-quality postsecondary education for all Maryland residents.

Student Success: Promote and implement practices and policies that will ensure student success.

Innovation: Foster innovation in all aspects of Maryland higher education to improve access and student success.

This program aligns most closely with the **Student Success** goals, and specifically with **Priority 5:** Maintain the commitment to high-quality postsecondary education in Maryland.

The Web Technology Certificate program was created to prepare credentialed graduates for immediate employment with local and regional technology companies and providers. This high-quality program aligns in particular with the Action item to “identify innovative fields of study,” and will increase graduates’ workforce readiness.

The program also aligns with **Priority 6:** Improve systems that prevent timely completion of an academic program.

The Web Technology Certificate program provides a clear pathway to graduation with specific course requirements in sequential order.

Additionally, the curriculum for the program is designed with a multiplicity of educational tools and resources to support the diverse learners at the College. Some courses offered are accessible in both in-person and online formats, which allows ease of access and flexibility to students enrolled in the program. In addition to the online format, some program courses are also offered in a structured remote format (synchronous) to allow greater flexibility to both students and program faculty. Remote tutoring and advising resources are also available for students as an ongoing effort to support and promote program success and timely completion by all students.

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

1. Describe potential **industry** or industries, **employment** opportunities, and expected **level of entry** (ex: mid-level management) for graduates of the proposed program.

According to data and information retrieved on December 14, 2024, from O*Net OnLine (<https://www.onetonline.org/link/summary/15-1299.01> and <https://www.onetonline.org/link/summary/15-1254.00>), graduates of the Web Technology Certificate are well-positioned to work in the technology industry as Web Administrators and Web Developers.

Web Administrators manage web environment design, deployment, development, and maintenance activities and perform testing and quality assurance of websites and web applications.

Web Developers develop and implement websites, web applications, application databases, and interactive web interfaces; evaluate code to ensure that it is properly structured, meets industry standards, and is compatible with browsers and devices, and optimize website performance,

scalability, and server-side code and processes. They may develop website infrastructure and integrate websites with other computer applications.

*Note: O*Net OnLine pulls data from the US Bureau of Labor Statistics for US data, and Projections Central for Maryland for Maryland data.*

2. Present data and analysis **projecting market demand** and the availability of openings in a job market to be served by the new program.

According to data and information retrieved on December 14, 2024 from O*Net OnLine (<https://www.onetonline.org/link/summary/15-1299.01> and <https://www.onetonline.org/link/summary/15-1254.00>), for the technology industry positions Web Administrator and Web Developer:

Occupation (Code)	MD Projected Annual Openings (2020-2030)	MD Projected Growth (2020-2030)	US Projected Annual Openings (2023-2033)	US Projected Growth (2023-2033)	MD Average Salary	US Average Salary
Web Administrator (15-1299)	1,640	14%	34,800	11%	\$135,740	\$104,940
Web Developer (15-1254)	550	13%	6,600	9%	\$83,150	\$84,960

According to the above data, the occupational outlook growth for the position of Web Administrator is listed as much faster than average (11% nationally, 14% Maryland), and the outlook for Web Developer is listed as Bright (faster than average; 9% nationally, 13% Maryland). The graduates of the Web Technology Certificate program would help supply the needs of the workforce with students preparing to enter this field.

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable **data** on the **educational and training needs** and the anticipated number of **vacancies** expected over the next 5 years.

According to data and information retrieved on December 14, 2024 from O*Net OnLine (<https://www.onetonline.org/link/summary/15-1299.01> and <https://www.onetonline.org/link/summary/15-1254.00>), for the technology industry positions Web Administrator and Web Developer:

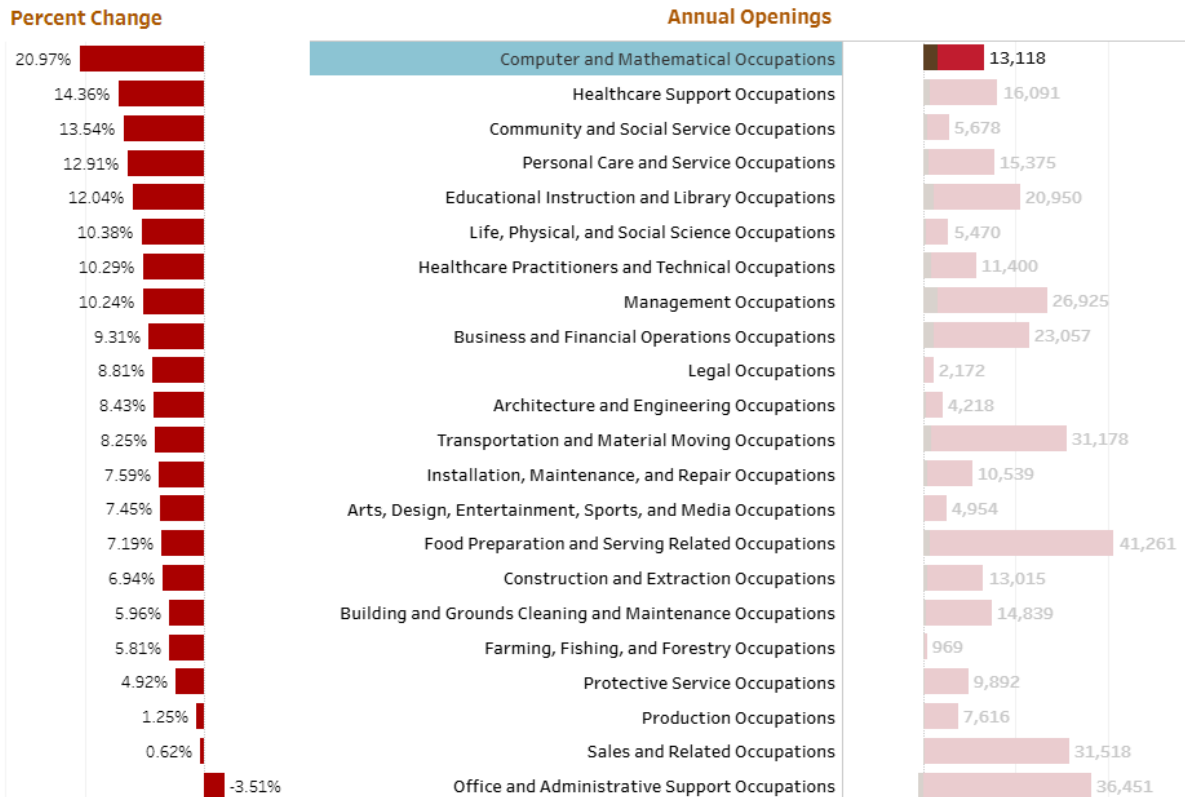
Occupation (Code)	MD Projected Annual Openings (2020-2030)	MD Projected Growth (2020-2030)	US Projected Annual Openings (2023-2033)	US Projected Growth (2023-2033)	MD Average Salary	US Average Salary
Web Administrator (15-1299)	1,640	14%	34,800	11%	\$135,740	\$104,940
Web Developer (15-1254)	550	13%	6,600	9%	\$83,150	\$84,960

According to the above data, over 40,000 openings are projected for the two positions targeted here annually across the US over the next decade. In Maryland, over 2,000 vacancies are projected. Many

of those openings are expected to result from the need for growth and to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Additionally, Maryland Occupational Projections - 2022-2032 – Workforce Information and Performance (<https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>) shows the following for major occupational groups:

Major Occupational Groups Long Term Projections Summary (2022-2032)



4. Provide data showing the current and projected supply of prospective graduates.

According to the MHEC Institution Program Inventory, there are five other community colleges and one university in Maryland that offer a certificate program of a similar title or CIP code. These programs graduated a total of 95 students between 2014 and 2021 according to trend data from MHEC (see below). This is well below the projected national and state of Maryland job annual openings for community health worker positions shown in Part C-3 above.

Supply of Graduates from Comparable Maryland Programs

Institution	Program Name (CIP)	2014	2015	2016	2017	2018	2019	2020	2021
Anne Arundel CC	Full-Stack Web Development	0	2	1	2	4	4	0	3

Certificate (11.0899)									
Capitol Tech Univ.	Web Programming Certificate-LDC (11.0101)	0	0	0	0	0	0	1	0
Hagerstown CC	Web/Multimedia Devel. Certificate (11.0801)	0	0	1	1	0	0	0	0
Howard CC	Web Developer Certificate (11.0901)	2	2	2	2	7	2	1	4
Montgomery Col.	Web Design Certificate (52.1299)	4	8	3	1	0	3	4	2
Montgomery Col.	Web Development Certificate (52.1299)	2	2	1	0	2	0	3	0
Wor-Wic Comm Co.	Web Development Certificate (11.0501)	1	4	1	7	3	0	3	0
Source: MHEC Trends in Degrees and Certificates by Program 2014-2021 , published March 2022									

Part D: Reasonableness of Program Duplication:

1. Identify **similar programs** in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.

For more information: [Academic Program Inventory](#) and [Degree Trend Data](#)

Anne Arundel Community College offers a **27-credit certificate in Full-Stack Web Development**. This certificate aims for students to develop and apply web design, database manipulation, programming, and server-side scripting skills to create interactive websites. According to AACC’s 2024-2025 catalog, this certificate has not been approved for federal financial aid. Similarities include courses in web development, JavaScript, and server-side development. AACC’s certificate consists of nine 3-credit courses, while PGCC’s certificate consists of six 3-credit courses.

Capitol Technology University offers a **12-credit Lower Division Certificate in Web Programming**. Students learn about the Web and the basic tools used for web page construction, including HTML, DHTML, scripting, CSS and an overview of XML. The database management course provides students with an understanding of relational databases, how they are designed, how data is stored in them, and how that data can be accessed. The final two courses, intermediate Java programming and Web/CGI programming using perl, provide students with the programming techniques and tools needed to create truly dynamic webpages. PGCC’s certificate offers similar courses in programming and languages, but PGCC’s certificate is 18 credits.

Hagerstown Community College offers a **30-credit certificate in Web/Multimedia Development**. This program consists of specialized courses designed to develop knowledge and skills in the use of tools, equipment, traits, attitudes, and behaviors that are desirable for workers in the Web development occupation. This certificate is similar to PGCC’s in offering courses in introduction to information technology and web development but differs in that it offers courses in introduction to business, UNIX, computer graphics, JavaScript, and web design.

According to the MHEC Academic Program Inventory, **Howard Community College (HCC)** offers a **Web Developer Certificate**, although no information could be located for this program in HCC’s current catalog.

Montgomery College (MC) offers a **29-30 credit certificate in Web Design** that is designed to provide training, skills, and knowledge that prepare a student for employment as a member of a web

development team. Skills include website management, advanced web design techniques using a variety of software, effective communication between web authors and system administrators, HTML validity, editorial responsibilities, and liaison with graphic artists and others. The courses in this program are primarily focused on graphic design, which is different than PGCC's program. MC does offer elective courses in website development, web content management, and JavaScript that are similar to PGCC's program.

Montgomery College (MC) also offers a **17-credit certificate in Web Development** that provides students with the skills and knowledge needed to excel in the rapidly growing field of website and web application development. Students in this program will gain hands-on experience in HTML, CSS and JavaScript, as well as database and web application development, using industry standard equipment and software. This certificate prepares students for a variety of entry and mid-level positions as user-interface developers, web developers, digital media specialists, web designers and multimedia specialists. This program can be completed either on campus or online. This certificate is very similar to PGCC's program with similar course offerings.

Wor-Wic Community College offers a **27-credit certificate in Computer Technology, Full Stack Web Development** that focuses on the basic knowledge needed to obtain an entry-level full stack web developer position. This certificate offers some similar courses to PGCC's program, but also requires some additional introductory courses. Wor-Wic's program does not offer any programming language courses like PGCC's program offers.

PGCC's 18-credit Web Technology Certificate program requires courses in introduction to information technology, internet and web technology, programming logic and design, client-side web development, programming in C++, programming in Java, introduction to Python, and server-side web development.

Ultimately, PGCC's incorporation of coursework in C++ programming and Python set PGCC's program apart from what other community colleges are offering. PGCC's program cannot be completed fully online at this time.

2. Provide **justification** for the proposed program.

The Web Technology Certificate program provides the required foundation and preparation for web-based technology-related fields in Prince George's County and the nearby region. Revisions and updates will better prepare students for the workforce.

Although the other community colleges listed in Part D-1 offer only similar programs, they serve populations outside of Prince George's County. Many of the students in our student population would not have the ability or resources to travel that distance to access courses in those programs. Given that Prince George's County is such a diverse and highly populated county, the program serves a significant portion of the population in the state of Maryland and in the DMV region.

This certificate program meets the needs of the county's large population as the only college offering such a program in the county. Advantages for students in this program include tuition costs and the availability of state-of-the-art equipment and teaching/learning spaces in the Center for Advanced Technology.

Part E: Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program's potential **impact** on the implementation or maintenance of **high-demand programs at HBI's**.

This is not a transfer program. PGCC does not anticipate that this program will have any impact on the implementation or maintenance of high-demand programs at HBIs.

PART F: Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

This is not a transfer program. Therefore, the proposed program will not impact the uniqueness and institutional identities and missions of HBIs.

PART G: Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in [COMAR 13B.02.03.10](#)):

1. Describe how the proposed program was **established**, and also describe the faculty who will **oversee** the program.

Establishment of the Program:

PGCC has an established process for curriculum development and revision which is driven by the faculty and overseen by the Office of the Executive Vice President & Provost for Teaching, Learning & Student Success. Program proposals originate with faculty at the department level. After a proposal is approved by the academic coordinator, department chair, and division dean, it moves through several steps in the approval process including the Assessment Committee, Curriculum Committee, General Education Committee and Transfer Office (as applicable), and Executive Vice President & Provost. The final step for new programs or a substantial modification is approval from the President and the College's Board of Trustees, before submission to MHEC for approval.

Faculty who will oversee the program:

Dr. Mohammed Ali, Department Chair, Technology, Engineering, and Construction department

2. Describe educational **objectives and learning outcomes** appropriate to the rigor, breadth, and (modality) of the program.

The educational objective of the Web Technology Certificate program is for students to learn to use various Internet and World Wide Web-based environments and technologies in the web development industry. Students learn to apply logic to analyze, design, and program using web programming languages. Students utilize file management and information technology tools as well as learn how to design and maintain a professional website that includes professional digital communication. Additionally, students use client- and server-side programming languages and applications and learn object-oriented programming concepts through robust hands-on practice. The Web Technologies Certificate prepares students for positions as web developer, web designer, web content manager,

and web programmer. All of the courses in this certificate can be applied to the Information Technology A.A.S. program.

Graduates of the Web Technology Certificate will be able to:

1. Apply fundamental information technology concepts in order to manage files and effectively use a variety of information technology tools.
2. Apply Web technology concepts and tools to design and maintain a professional website.
3. Conceptualize, design, and diagram possible solutions to logical problems, focusing on those problems which are amenable to a computer-based solution.
4. Analyze, design, and develop a real-world web application.
5. Communicate effectively and professionally using web communication technologies.

Many of the concepts, skills, and technologies in this program are best learned in an in-person, collaborative environment with a hands-on approach. For this reason, some of the program courses will be primarily face-to-face.

3. Explain how the institution will:

- a) *provide for assessment of student achievement of learning outcomes in the program*
- b) *document student achievement of learning outcomes in the program*

The College's Research, Assessment, and Effectiveness (RAE) office manages the assessment cycle and determines when programs are assessed. Course-level assessment is a part of program-level assessment to determine how students are meeting program outcomes. The College uses an all-in-one approach to assessment and assessment instruments are aligned to the course outcomes and peer-reviewed by the Teaching, Learning, and Assessment Committee (TLAC). The assessment instruments are administered and the data is analyzed to generate a Student Learning Outcome Assessment Report (SLOAR) and a Program Learning Outcome Assessment Report (PLOAR). The SLOAR and PLOAR are used to develop an action plan including re-assessment and the results are reviewed.

4. Provide a list of **courses** with title, semester credit hours and course descriptions, along with a description of **program requirements**

INT-1010 Introduction to Information Technology (Program Requirement)

Credits: 3

Introduction to Information Technology is a survey course in evolving information technology and its relevance to individuals and society. Students examine the categories of computing devices and different types of computer applications, software and their uses. Emphasis in this course is on enhancing students' skills in data analysis and programming. Additionally, students evaluate ethical principles related to privacy, security, intellectual property and how these apply to their academic and professional life. They also explore strategies to manage risks related to systems security threats. Lastly, students learn about the basic principles of connectivity and data communications. Students possessing skills and knowledge in this area may receive credit for INT 1010 by passing the department's challenge exam (currently the three Internet and Computing Core Certification tests, known as IC3). Students who are already IC3 certified may receive credit for INT 1010 by presenting their three certificates to the transfer evaluator in the Office of Records and Registration.

INT-1800 Internet and Web Technology (Program Requirement)

Credits: 3

Provides an overview of the Internet and the major applications, relevant standards and protocols, and ethical issues associated with it. Students will learn to develop a website using storyboarding techniques and HTML and manage it via FTP. Hands-on projects that utilize new and emerging communication technologies will be explored.

INT-1111 Programming Logic and Design (Program Requirement)

Credits: 3

This course is an introduction to computer programming concepts with an emphasis on structured program logic and design. Procedural and object-oriented concepts are introduced in this course and students use a variety of software packages to develop flowcharts and pseudo-code. This course does not address a particular programming language, but rather emphasizes problem solving techniques that can be applied to programming in any language. Examples from various programming languages may be used to illustrate concepts. This course contains a lab component and students acquire hands-on skills and practical applications of data validation and internal and external program documentation.

INT-1850 Client-Side Web Development (Program Requirement)

Credits: 3

As a continuation of INT-1800, HTML/XHTML and Cascading Style Sheets (CSS) are used to design and create Web pages. These Web pages are further enhanced by including advanced elements of HTML, such as forms and frames and by adding multi-media elements, such as audio, video, and animation. JavaScript is further used to make HTML documents interactive. Other topics discussed include the Document Object Model, the object-based features of JavaScript, and use of a debugger to debug JavaScript code.

INT-2130 Programming in C++ (Program Elective)

Credits: 3

Using the C++ language, the course incorporates the concepts covered in INT-1111(Programming Logic and Design) and applies them specifically to the C++ programming language. Topics include basic C++ syntax, control structures, functions, arrays, file processing, pointers, structures, classes/objects and inheritance.

INT-2200 Programming in Java (Program Elective)

Credits: 3

Comprehensive course in Java incorporating the concepts covered in INT-1111 and applying them specifically to the Java programming language. Topics include object-oriented programming (classes/objects), control structures, methods, arrays, polymorphism, inheritance, recursion, exception handling, graphical user interfaces, file input/output.

INT-2240 Introduction to Python (Program Elective)

Credits: 3

In this course, students learn the concepts, principles, techniques, and tools needed for developing scripts and programs in Python. Students who successfully complete the course are able to write Python programs using features such as loops, branching structures, lists, tuples, dictionaries, libraries, and object-oriented programming.

INT-2850 Server-Side Web Development (Program Requirement)

Credits: 3

Building on the knowledge gained in INT-1850 on how to develop Web pages on the client side, students learn how to do server-side Web development using PHP, an open-source scripting language, and MySQL, an open-source database system. Students learn to create and modify Web pages dynamically by executing server-side PHP scripts. Additionally, students learn to set up queries to a relational database system to provide data requested through HTML forms.

5. Discuss **how general education requirements** will be met, if applicable.

As a certificate program, this program does not have any general education requirements.

6. Identify any **specialized accreditation** or **graduate certification requirements** for this program and its students.

There are no specialized accreditation or graduate certification programs associated with this program.

7. If **contracting** with another institution or non-collegiate organization, provide a copy of the written contract.

There is no contract with any other institution or non-collegiate organization associated with this program.

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.

Clear, complete, and timely information on the curriculum, course, and degree requirements will be posted in the [college catalog](#). Each program has a dedicated page in the college catalog where the program description will be located. The nature of faculty and student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, and availability of academic support services are located in the course syllabus, college catalog, or the Learning Management System. Financial aid resources, costs, and payment policies are located on the college website under "[Paying For College](#)".

9. Provide assurance and any appropriate evidence that **advertising, recruiting, and admissions materials** will clearly and accurately represent the proposed program and the services available.

The PGCC Office of Marketing will create brochures, flyers, and electronic marketing (e-marketing) materials necessary to promote and advertise the program to potential students. The Office of Marketing department provides communications materials that create awareness and visibility to efforts to promote the program externally, while the Office of Communications promotes programs to the campus community. The internal process of creating recruitment and advertising materials

follows the internal process used by the Office of Communications. The information regarding prior learning can be found on the College website: [Transfer Credit Policies and Procedures](#)

PART H: Adequacy of Articulation

1. If applicable, discuss how the program supports **articulation** with programs at partner institutions. Provide all relevant articulation agreements.

This is a certificate program and is not intended to transfer. As such, this program does not have any articulation agreements with programs at partner institutions.

Part I: Adequacy of Faculty Resources (as outlined in [COMAR 13B.02.03.11](#)).

1. Provide a brief narrative demonstrating the **quality of program faculty**. Include a summary list of faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faculty member will teach in the proposed program.

<i>Faculty Name</i>	<i>Appointment Type</i>	<i>Terminal Degree Title and Field</i>	<i>Academic Title/Rank</i>	<i>Status (FT or Adjunct)</i>	<i>Course(s) Faculty Member will teach in this Program</i>
Ali, Mohammed	Tenure-track	Ed.D. in Organizational Leadership (Instructional Technology-Concentration)	Professor	Full-time	INT-1111 Programming and Logic Design; INT-1800 Internet and Web Technology; INT-2130 Programming in C++
Ogunlana, Kola	Tenure-track	DSc. Computer Science	Associate Professor	Full-time	INT-2200 Programming in Java; INT-2240 Introduction to Python
Idrees, Ayman	Contract	MS – Information Technology	Instructor	Adjunct	INT-1010 Introduction to Information Technology; INT-1850

					Client-Side Web Development; INT-2850 Server-Side Web Development
--	--	--	--	--	-------------------------------------------------------------------------------------

2. Demonstrate how the institution will provide **ongoing pedagogy training** for faculty in evidenced-based best practices, including training in:

- a. *Pedagogy that meets the needs of the students*
- b. *The learning management system*
- c. *Evidenced-based best practices for distance education, if distance education is offered.*

a. The Teaching and Learning Center (TLC) at Prince George’s Community College (PGCC) is dedicated to supporting the needs of our faculty and students by providing quality resources and professional development opportunities to promote best practices in teaching and learning. The TLC hosts an internal Canvas site, that houses resources such as videos, articles, asynchronous training, and links to various educational sites for more support. Resources in this area include Open Educational Resources (OERs), strategies to engage students, ways to integrate technology, collaborative learning, inquiry-based learning, writing to learn, and more.

The TLC works with various organizations to provide pedagogical resources and training for all faculty members. The College has partnerships with MAGNA Publications, the National Institute for Staff and Organizational Development (NISOD), the Association of College and University Educators (ACUE), University of Maryland, Baltimore County (UMBC), and the Online Learning Consortium (OLC). All of these organizations support institutions of higher education in addressing the needs of the faculty and students. The professional development includes presentations on active learning, Hy-Flex teaching, assessment, course design and delivery, higher-order thinking, and leadership, just to name a few.

Various workshops and cohort groups are held regularly in person and online to support faculty. The topics of the presentations vary but all support effective teaching and learning practices for higher education. Recent areas included:

- Game-based Learning
- Active-Learning
- Open Educational Resources
- Peer Mentoring

PGCC also provides professional development support for faculty through conferences, on and off campus. Faculty self-select attendance at professional, university, and college workshops. Annually the college hosts two full-day professional development conferences. The workshops focus on best practices in higher education, active learning strategies, and high-impact practices.

b. To support training with the Learning Management System (LMS), the TLC works with internal partners such as eLearning to host Canvas presentations (Canvas is PGCC’s LMS). Internal and external support is provided to train faculty on various aspects of the LMS and how it can be used to support

student success. Workshops include, creating accessible assignments, engaging students, adding rubrics, using polls and more. The college consistently provides professional development to increase the knowledge and use of other technologies linked to our LMS, such as Voice Thread, and Panopto.

c. PGCC has various tools in place to support our students and faculty as they learn and teach at a distance. The College offers Structured Remote Training and Online Express Prep to support the faculty in the course design and delivery of online courses. Beyond this, PGCC works with Quality Matters to provide professional development for faculty that teach asynchronously to make sure best practices are used in online teaching. Another form of professional development that supports best practices for distance education is the course from the Association of College and University Educators (ACUE). These courses support evidence-based teaching practices that include, creating an inclusive and supportive learning environment, promoting active learning online, and designing learner-centered courses just to name a few. PGCC also partners with the Online Learning Consortium (OLC) which is known for promoting best practices for distance learning. At PGCC, we offer faculty professional development for teaching in a Hy-Flex format. This training teaches ways to include and engage all students while promoting best practices in online instruction.

PART J: Adequacy of Library Resources (as outlined in COMAR [13B.02.03.12](#)).

1. Describe the **library resources** available and/or the measures to be taken to ensure resources are adequate to support the proposed program.

The library maintains extensive, online-accessible databases, journals, and e-texts. Students may request holdings and inter-library loans either by email or in person. Additionally, the library will provide journals and publications specifically related to the various professions in the field.

The PGCC library has extensive online resources available to students, including:

- Credo Reference
- EBook Central
- EBSCO Host Academic E-book Collection Gale Virtual Reference Library
- Information Science (Gale OneFile)
- ProQuest General Database
- PubMed Database
- Streaming Video Films on Demand VAST Academic Video Collection

Moreover, the library has ready access to:

- a) Interlibrary loan services compliant to and in support of the Library of Congress and its Bibliographic Utilities.
- b) The holdings of the Prince George's County Memorial Library System.
- c) The holdings of the University of Maryland System.

PART K: Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in [COMAR 13B.02.03.13](#)).

1. Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences.

This program will mainly be housed in the Center for Advanced Technology. Current buildings, classroom and office spaces, and teaching and learning equipment are sufficient to support this program. All facilities and equipment are subject to routine cleaning, inspection, and maintenance.

Additionally, the program will have access to the Center for Advanced Technology building, which includes the following:

25 classrooms with computer labs to include the following specialized instruction labs (average seating capacity 26):

- Cisco CCNA
- Engineer Technology Lab
- Engineering Lab
- A+ Troubleshooting Lab
- Computer Graphics / Multimedia Lab

4 classrooms without lab (average seating capacity 24)

2 open computer labs with various types of workstations and collaboration spaces (35 computers each)

2 study labs (average seating capacity 10)

27 faculty workspaces

2 conference rooms

1 certification testing center

Lunch/break room

2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate **access** to:

- a. *An institutional **electronic mailing system***

Prince George's Community College provides access to its electronic mailing system (Microsoft 365 Outlook) to its full-time and part-time faculty members. Each faculty member's school email address uses the domain @pgcc.edu. Faculty receive emails from both students and colleagues via the Outlook system. Students enrolled in credit programs are issued a school email address upon enrollment. Each Prince George's Community College student email address uses the domain @students.pgcc.edu.

- b. *A **learning management system** that provides the necessary technological support for distance education*

Each course offered at the College is created in a Canvas shell that allows remote access during a given semester. Each faculty member, full-time or part-time, is given access to each class that he/she is assigned to teach via the Canvas Learning Management System (LMS). Within the learning management system, faculty can see who is enrolled in the course, create a grade book, create discussion boards, upload various content formats, and communicate with individuals or groups of students. Zoom is integrated into each Canvas course through an LTI (learning tools integration). Panopto is integrated into each Canvas section through an LTI to ensure student privacy as well as provide streaming technology in accordance with the best practices for video.

After successfully enrolling in a course at Prince George’s Community College, each student is provided access to each course that he/she is enrolled in for the given semester. Access to the course is granted four days prior to the official start of the course. Within the learning management system, students can access all course content posted by the instructor, access graded assignments, and communicate with the instructor and other students.

PART L: Adequacy of Financial Resources with Documentation (as outlined in [COMAR 13B.02.03.14](#)).

1. Complete **Table 1: Resources and Narrative Rationale**. Provide **finance data** for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a **narrative rationale** for each resource category. If resources have been or will be reallocated to support the proposed program, briefly discuss the sources of those funds.

TABLE 1: RESOURCES					
Resources 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)	\$52,290	\$74,700	\$85,158	\$98,604	\$119,520
a. Number of F/T Students	10	15	17	20	25
b. Annual Tuition/Fee Rate	\$2,988	\$2,988	\$2,988	\$2,988	\$2,988
c. Annual F/T Revenue (a x b)	\$29,880	\$44,820	\$50,796	\$59,760	\$74,700
d. Number of P/T Students	15	20	23	26	30
e. Credit Hour Rate	\$166	\$166	\$166	\$166	\$166
f. Annual Credit Hours	9	9	9	9	9
g. Total P/T Revenue (d x e x f)	\$22,410	\$29,880	\$34,362	\$38,844	\$44,820
3. Grants, Contracts & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$0	\$0	\$0	\$0	\$0
TOTAL (Add 1 – 4)	\$52,290	\$74,700	\$85,158	\$98,604	\$119,520

Reallocated Funds:

There are no reallocated funds needed to support this program.

Tuition/Fee Revenue:

Assuming modest growth in both full-time and part-time enrollments, and tuition and fees are assumed constant over the next five years, the table displays the overall financials for the program. The in-county tuition rate of \$119 per credit hour and an instructional service fee of \$47 per credit hour, for a total of \$166 per credit have been used to calculate revenue; with 18 credits per year for full-time students, and an average of 9 credits per year for part-time students. Note that the total number of credits needed to complete this certificate is 18.

Grants, Contracts, & Other External Sources:

This program does not use grants, contracts, or external sources for funding.

Other Sources:

There are no other sources used for funding.

2. Complete **Table 2: Program Expenditures and Narrative Rationale**. Provide finance data for the **first five years** of program implementation. Enter figures into each cell and provide a total for each year. Also provide a **narrative rationale** for each expenditure category.

TABLE 2: PROGRAM EXPENDITURES					
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of 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. Number of 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. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
4. Technical Support and 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
8. TOTAL (Add 1 – 7)	\$0	\$0	\$0	\$0	\$0

<p><i>Faculty:</i></p> <p>Since this is an existing embedded certificate within the Information Technology, A.A.S. degree program, there are already a number of qualified full-time and adjunct faculty currently employed by the College to teach the required program courses. No new faculty are needed.</p>
<p><i>Admin Staff:</i></p> <p>This program is housed in the Technology, Engineering, and Construction department, as part of the STEM Division, which already has a dean, associate dean, department chair, and coordinator in place who will support the program. No additional administrative staff is necessary.</p>
<p><i>Support Staff:</i></p> <p>This program will be housed in the Technology, Engineering, and Construction department. Office associates support the department as a whole, and not individual programs, so it is not expected that any new support staff will be needed.</p>
<p><i>Technical Support and Equipment:</i></p> <p>There is no additional or new technical support or equipment needed for this program. Current technical support and equipment are sufficient for the needs of the students and faculty.</p>
<p><i>Library:</i></p> <p>Current library materials are sufficient for the needs of the students and faculty.</p>
<p><i>New or Renovated Space:</i></p> <p>There is no new or renovated space needed for this program. Current classroom space is sufficient for the needs of the students and faculty.</p>
<p><i>Other Expenses:</i></p> <p>There are no other expenses required or needed for this program.</p>

Part M: Adequacy of Provisions for Evaluation of Program (as outlined in COMAR [13B.02.03.15](#)).

1. Discuss procedures for **evaluating courses, faculty and student learning outcomes**.

<p>Prince George’s Community College has identified three sets of learning outcomes for its students: course, program, and the College’s Core Competencies (institutional learning outcomes). Course outcomes define the skills, knowledge, and values that students are expected to acquire upon completion of a course. Program outcomes specify the skills, knowledge, and values that students are expected to acquire upon completion of a program of study. The College has a rigorous course and program assessment process. Course assessment takes place by using embedded tests and assignments that address specific course outcomes. Data from these course-embedded assessments are publicly distributed every semester in the Student Learning Outcomes Assessment Report (SLOAR). An additional report showing student achievement of the Program Learning Outcomes Assessment Report (PLOAR) and Student Core Competencies are published every year and analyzed to improve courses and to ensure program learning outcomes are met.</p> <p>Non-tenured faculty members are evaluated yearly by students and administrators. Each year, non-tenured faculty members have their course material and student evaluations assessed by their department chairs and deans, with final verification of the assessment conducted by the Executive Vice President and Provost for Teaching, Learning, and Student Success. In order to receive high</p>

evaluations, faculty members must demonstrate effective teaching above all, but professional development in the discipline and participation in departmental, divisional, and college-wide activities is also assessed. The same criteria for evaluation are carried out for tenured members of the faculty, but once every three years. The above assessment process also provides administrators the opportunity to set out action plans for faculty improvement in teaching, professional development, and/or college service for each or any of those facets of the faculty member's career to be enhanced.

2. Explain 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.

Complete program assessment takes place every five years, with progress toward achievement of improvement plans being evaluated every two years. Data regarding enrollment, retention, and graduation are collected and analyzed against program outcomes, courses offered, and other variables. Each program must have an advisory board consisting of professionals in the field to assist in the construction and analysis of program review data. The college has a five-year program review cycle which entails the program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

PART N: Consistency with the State's Minority Student Achievement Goals (as outlined in [COMAR 13B.02.03.05](#)).

1. Discuss how the proposed program addresses **minority student access and success**, and the institution's **cultural diversity goals and initiatives**.

Prince George's Community College provides affordable, high-quality learning experiences that support personal, professional, and educational development for diverse populations, contributing to the economic equity and cultural vibrancy of our community. The mission of Prince George's Community College is compatible with the State's minority achievement goals. The College provides accessible and affordable education, and it is committed to diversity. With a majority African American student body and a significant Hispanic/Latino student population, Prince George's Community College is well positioned to provide opportunities for students traditionally underrepresented in higher education. Moreover, the graduates of this program will further align with the racial makeup of the region's workforce. The College will continue to recruit a diverse student base from both public and private schools and the local community. In addition to working with and relying on the college's student recruiting professionals, additional activities to recruit a diverse body of students will include:

- involvement with community-based organizations, high schools, and teen church programs;
- increased visibility of the new programs (e.g. college Website and catalog); and
- clear communication about the integrated nature of the academic work with practical experience and professional networking opportunities.

In sum, the College will continue to engage with community partners and stakeholders who represent the diversity of the region.

PGCC has a Diversity, Equity, and Inclusion office and a number of programs geared to special populations, including Diverse Male Student Initiatives (DMSI), Women of Wisdom (W.O.W.), and

Vocational Support Services. Additionally, interactive workshops and cultural diversity events are available on an ongoing basis at both the main campus and the extension centers. Furthermore, a Truth, Racial Healing, and Transformation (TRHT) Campus Center organizes Listening Sessions and Racial Healing Circles. Each of these initiatives focuses on improving the retention and success of minority students.

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

1. If the proposed program is directly related to an **identified low productivity program**, discuss how the fiscal resources (including faculty, administration, library resources and general operating expenses) may be redistributed to this program.

This program is not considered a low productivity program.

PART P: Adequacy of Distance Education Programs (as outlined in [COMAR 13B.02.03.22](#))

1. Provide affirmation and any appropriate evidence that the institution is eligible to provide **Distance Education**.

Prince George's Community College is eligible to provide Distance Education by the Maryland Higher Education Commission (MHEC). Please see File 22293.

2. Provide assurance and any appropriate evidence that the institution complies with the **C-RAC guidelines**, particularly as it relates to the proposed program.

Prince George's Community College provides assurance that programs that are offered in a distance format comply with current CRAC guidelines. Please find a copy of the institution's accreditation status for offering distance learning through MSCHE at the following link: <https://www.msche.org/institution/0175/>. The college also participates in the National Council for State Authorization Reciprocity Agreements (NC-SARA) as evidenced by the following link: <https://nc-sara.org/directory>.

The program offers the following courses in a distance-learning format:

INT-1010: Introduction to Information Technology
INT-1800: Internet and Web Technology
INT-1111: Programming Logic and Design
INT-1850: Client-Side Web Development