



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

Institution Submitting Proposal	College of Southern Maryland
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*Each action below requires a separate proposal and cover sheet.*

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

Payment Submitted:	<input type="radio"/> Yes <input type="radio"/> No	Payment Type:	<input type="radio"/> R*STARS <input checked="" type="radio"/> Check	Date Submitted:	1-8-19
Department Proposing Program	Business, Technology, and Public Services				
Degree Level and Degree Type	Associates, AAS				
Title of Proposed Program	Software Development				
Total Number of Credits	60-61				
Suggested Codes	HEGIS: to be provided by MHEC		CIP: 11.0201		
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education ( <i>fully online</i> ) <input checked="" type="radio"/> Both				
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: 2019				
Provide Link to Most Recent Academic Catalog	URL:				
Preferred Contact for this Proposal	Name: Bernice Brezina				
	Title: Professor and Chair, Business, Technology, and Public Service Div.				
	Phone: 301-934-7556				
	Email: berniceb@csmd.edu				
President/Chief Executive	Type Name: Dr. Maureen Murphy				
	Signature:				Date:
	Date of Approval/Endorsement by Governing Board: 12/13/18				

Revised 6/13/18

**A. Centrality to mission and planning priorities, relationship to the program emphasis as outlined in the mission statements, and an institutional priority for program development;**

The mission statement of the College of Southern Maryland (CSM) inspires the development of close partnerships among the college and its tri-county community stakeholders. The institutional commitment to “enhances lives and strengthens the economic vitality of a diverse and changing region by providing affordable postsecondary education, workforce development, and cultural and personal enrichment opportunities“ aligns with the programmatic realities for the Software Development AAS degree.

This proposal presents a new Software Development AAS degree. This degree will bridge the gap between the Information Systems AAS and Computer Science AS degrees by providing a program that will prepare students for in-demand entry level programming and software development careers. The degree will provide students with marketable skills upon completion to enter the work force while also providing some flexibility for students who intend to transfer to a four-year institution.

This program will utilize existing courses in the Information Systems AAS, Information Services Technology: Web Developer, and Computer Science AS programs.

The Software Development AAS program is consistent with CSM’s Strategic Priorities, which is to promote student success by providing outstanding education, relevant programming, regional focus, and related support services that help students achieve their goals. The new program will serve to increase graduate satisfaction with job preparation.

This Software Development AAS program will “effectively serve a changing student population and emerging workforce.” The course selections reflect the changing local workforce needs. The recommendations enclosed are reflections of these elements and are consistent with the College’s Vision, “To transform lives through lifelong learning and service.”

**B. Critical and compelling regional or Statewide need as identified in the State Plan;**

The availability of an in-demand Software Development career path in an ever-evolving high technology industry, will attract both traditional and returning adult students, those entering a new field of opportunity as well as workers changing or upgrading skills. These very changes are evident in CSM’s own enrollment records. An examination of the demographics of our current student population reflects these realities and supports the needs identified in the current Maryland State Plan for Post Secondary Education.

The degree in Software Development AAS at CSM is consistent with the elements of the 2017-2021 Maryland State Plan for Postsecondary Education. Much of our focus in curriculum development addressed the advisories cited in this document. All the goals were utilized as

required criteria but considerable attention was given to the goal of Innovation. “Foster innovation in all aspects of Maryland higher education to improve access and student success.” The new Software Development AAS program will strengthen economic development and help to support a skilled workforce for the Southern Maryland region.

Citations in the State Plan also address the need for post secondary institutions to strive for academic excellence and effectiveness. Addressing the goal of Success, “Promote and implement practices and policies that will ensure student success.”, the Software Development program will provide the opportunity for students to complete this hands-on program in Southern Maryland close to their home and obtain the fundamental knowledge, skills, and practice to be prepared for entry-level employment. The very nature of this charge is to develop student-centered learning bolstered by the partnerships with the various media employers in our region. This format increases experiential learning through capstone, cooperative education, and other hands-on job related activities assuring workplace readiness.

Formative and summative evaluations are an essential value of the educational process at CSM, and are a viable part of the new CSM program. Students are held to standards that are reflective of academic and professional systems, while the structure and operation of the program provides the environment to support the achievement of these standards.

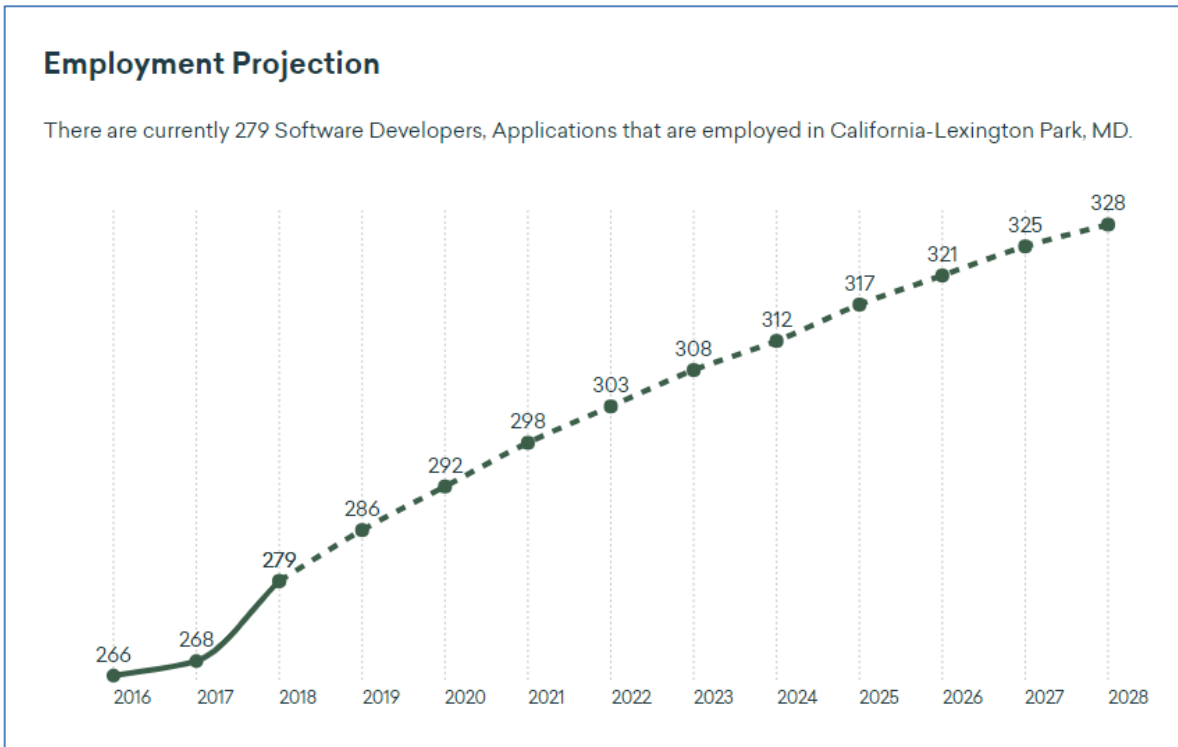
Local employers have expressed interest in a Software Development program and currently provide substantive experiential learning through capstone, cooperative education, and internship opportunities through the current Information Systems, Information Services Technology: Web Developer, and Computer Science programs. These are extremely important as they provide students enrolled at CSM in the Software Development program both vital experience and opportunities for networking, and will increase chances of getting a job significantly.

To expand our geographic reach, stimulate enrollment and provide increased access to this new curricular option, the Software Development program intends to incorporate alternative means of course --delivery. The program intends to provide traditional face-to-face courses complimented by offerings that are hybrid or fully online by form. The College of Southern Maryland has demonstrated success in delivering instruction by alternative methods, increasing flexibility and effective use of new technologies. The Division of Distance Learning and Faculty Development (DLF) supports the faculty in developing high quality, accessible and effective teaching and learning environments. To facilitate these goals, the DLF staff provides service to faculty including planning, consulting, training, and support. The DLF staff makes available the resources necessary to incorporate instructional technologies into their traditional or distance learning courses. As such, the DLF staff will contribute significantly to the delivery of all courses in the Software Development program by providing the faculty with the necessary support structures to enhance student success in their delivery, particularly those identified for distance learning, be the methodology fully on line or hybrid.

In summary, the new Software Development program at the College of Southern Maryland as proposed is consistent with and reflective of the current Maryland State Plan for Postsecondary Education.

**C. Quantifiable and reliable evidence and documentation of market supply and demand in the region and service area;**

The Southern Maryland region of California-Lexington Park, MD in St. Mary’s County is expecting a positive growth in software developer jobs. Much of this is driven by the college’s close physical proximity to the Patuxent Navy Base in St. Mary’s county which employs over 17,000 military, civilian, and contractors, with many of them in technical positions. Below is a representation of expected growth per the Economic Modeling Specialists (EMSI, 2018). With the increased reliance of private industry and government reliance on computer systems, this growth is expected to continue to trend up in the foreseeable future.



**D. Reasonableness of program duplication, if any;**

The Software Development AAS degree program prepares students who are interested in programming, software development, and software engineering to begin developing the skills and knowledge required for a variety of entry-level settings. The degree prepares students with a foundation and basis of knowledge and skills that students may develop further if they choose to continue their studies at a four-year institution. Others may choose to enter the workforce in entry-level, trainee, or internship positions after completing the two-year degree.

Students will be taking courses in this program through several course delivery formats. Students have the option of completing this degree entirely online. For many courses though, students may choose between face-to-face, web-hybrid, or online course sections.

Currently, there are no associates degree programs in Maryland offering a program in software development. Many schools offer related AAS programs in Information Systems:

Institution	Program	Degree
Baltimore City Community College	COMPUTER INFORMATION SYSTEMS	Associate Degree
Brightwood College	NETWORK INFORMATION SYSTEMS	Associate Degree
Carroll Community College	COMPUTER INFORMATION SYSTEMS-MICRO	Associate Degree
Cecil College	COMPUTER INFORMATION SYSTEMS	Associate Degree
Chesapeake College	COMPUTER INFORMATION SYSTEMS	Associate Degree
College of Southern Maryland	INFORMATION SYSTEMS	Associate Degree
Hagerstown Community College	INFORMATION SYSTEMS TECHNOLOGY	Associate Degree
Harford Community College	COMPUTER INFORMATION SYSTEMS	Associate Degree
Prince George's Community College	COMPUTER INFORMATION SYSTEMS	Associate Degree

**E. Relevance to the implementation or maintenance of high-demand programs at HBIs;**

There are no HBI's that are currently offering a Software Development degree.

**F. Relevance to the support of the uniqueness and institutional identities and missions of HBIs;**

There are no HBI's that are currently offering a Software Development degree.

**G. Adequacy of curriculum design and delivery to related learning outcomes  
consistent with Regulation .10 of this chapter;**

AAS	
<b>General Education</b>	
3 credits English Composition	ENG-1010 English Composition* (3)
3 credits Arts/Humanities	COM-1010 Basic Principles of Speech Communication* (3)
3-4 credits Biological/Physical Sciences	SCE-1010 Scientific Reasoning and the Modern World (3)
3 credits Social/Behavioral Sciences	ECN-1015 Intro. To Business in a Market Economy* (3)
3 credits Mathematics	MTH-2300 Introduction to Statistics* (3)
Other General Education (from above categories) (3 credits)	MTH-1150 Precalculus Algebra and Trigonometry* (4)
<b>MHEC requires a minimum of 18 credits</b>	<b>General Education= 19</b>
<b>Major requirements</b>	ITS-1050 Computing Essentials* (3) ITS-1110 Program Design and Development* (3) ITS-1040 Systems Analysis and Design* (3) ITS-1205 Internet and Web Application Essentials* (3) ITS-2591 Computer Science I* (4) ITS-1120 Introduction to Database* (3) ENG-2050 Business and Technical Writing* (3) ITS-2592 Computer Science II* (4) ITS-2090 Computer Security* (3) ITS-2645 Web Server Setup and Security* (3) ITS-2492 Programming for the Web Using .NET* (3) ITS-2690 Web Programming* (3)
	<b>Major Requirements=38</b>
<b>Electives</b>	ITS 2900 Capstone Experience* (3) Or ITS 2910 Cooperative Education I: Computer* (3) Or ITS 1390 Programming Concepts for Engineering* (4)
	<b>Electives= 3-4</b>
	<b>Credit total= 60-61</b>
*courses requiring a prerequisite	

## Recommended Course Sequence:

### First Semester

ENG-1010 Composition and Rhetoric	3
SCE- 1010 Scientific Reasoning and the Modern World	3
ITS-1050 Computing Essentials	3
ITS-1110 Program Design and Development	3
MTH 2300 Introduction to Statistics	3

### Second Semester

MTH-1150 Precalculus Algebra and Trigonometry	4
ITS-1040 Systems Analysis and Design	3
ITS-2591 Computer Science I	4
ITS-1205 - Internet and Web Application Essentials	3

### Third Semester

ITS-1120 Introduction to Database	3
ENG-2050 Business and Technical Writing	3
ECN-1015 Introduction to Business in a Market Economy	3
ITS-2592 Computer Science II	4
ITS-2090 Computer Security	3

### Fourth Semester

ITS-2645 Web Server Setup and Security	3
COM-1010	3
ITS-2900 Capstone Experience or ITS 2910 Coop I or ITS 1390 Programming Concepts for Engineering	3-4
ITS-2492 Programming for the Web Using .NET Technology	3
ITS-2690 Web Programming	3

COM-1010 - Basic Principles of Speech Communication\* (3)

Prerequisite: ENG 0900 and RDG 0800

Students learn theories of listening, intrapersonal, interpersonal, intercultural, verbal, and nonverbal communication. Major units include informative and persuasive presentations and group discussion. College-level writing skills are recommended.

ECN-1015 - Introduction to Business in a Market Economy\* (3)

Prerequisite: ENG 0900 and RDG 0800

Students examine business in the United States as a social institution. Topics include economic systems, legal factors, and government regulations, forms of ownership, management, employee relations, finance, accounting, and marketing. ECN-1015 replaces BAD-1010. Students who have taken BAD-1010 may not take ECN-1015 for credit.

ENG-1010 - Composition and Rhetoric\* (3)

Prerequisite: ENG 0900; and RDG 0800; or placement

Students in this course complete their first semester college-level composition course. Students focus on planning, organizing, and developing a variety of argumentative compositions. Students practice the conventions of written Standard American English, gain information literacy skills, and learn research and documentation techniques including conducting online and print research and documenting sources. By the end of the semester, students demonstrate their ability to write a unified and coherent argument-based essay of about one thousand words that incorporates research and is nearly free of grammatical, mechanical, and structural errors. Students should refer to the schedule of classes for sections of this course taught in a computer lab. Students must pay an additional lab fee when taking this course in a computer-assisted classroom. Students may earn credit for this course through CLEP or Advanced Placement Examination. A minimum grade of "C" is required to pass the course.

ENG-2050 - Business and Technical Writing\* (3)

Prerequisite: ENG 1010

Students develop writing skills through composing a variety of clear, effective memos, letters, and reports. Subject matter for the papers may come from the student's occupation or interests, whether scientific, technical, or non-technical. Students should refer to the schedule of classes for sections of this course which are taught in computer labs.

ITS-1040 - Systems Analysis and Design\* (3)

Co-requisite: Previous or concurrent enrollment in ITS 1015 or ITS 1050

Students learn about the tools and skills a systems analyst uses to analyze, design, install and maintain a computer system using the system development life cycle. A case study with group work highlights major topics discussed. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

ITS-1050 - Computing Essentials\* (3)

Prerequisite: RDG 0800

Students gain knowledge and practical experience with PC hardware and peripherals, mobile device hardware, networking and troubleshooting, hardware and network connectivity issues. Students also gain practical experience installing and configuring popular operating systems. Students will be introduced to topics in security, the fundamentals of cloud computing and operational procedures. Additionally, students will gain practice using Office productivity software tools such as Excel. This course helps students to prepare for the CompTIA A+ Certification.



### ITS-1110 - Program Design and Development\* (3)

Prerequisite: RDG 0800

Students learn to solve business-oriented problems with emphasis on structured and object oriented programming techniques. Design tools are used to develop pseudo-code, flowcharting and 3D interactive environments. Students are introduced to several software packages that may be used to develop pseudo-code, flowcharts and interactive 3D environments. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

### ITS-1205 - Internet and Web Application Essentials\* (3)

Prerequisite: RDG 0800

Students learn to use Internet and intranet technologies and build simple web documents. Content includes creating basic HTML documents, Cascading Style Sheets, basic client-side scripting, simple forms, and an introduction to the basic concepts of web applications. For students who plan to use personal computers, this course may have specific computing requirements.

### ITS-1120 - Introduction to Database\* (3)

Prerequisite: ITS 1020 or ITS 1050

Students learn how to use a relational Database Management Systems (DBMS). Topics include building, modifying, implementing, management and administration of a relational DBMS using Microsoft Access. Students will learn how to create tables, queries, forms, reports, and relationships according to project requirements. This course uses lecture and a hands-on format. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

### ITS-1390 - Programming Concepts For Engineering\* (4)

Prerequisite: EGR 1100 or ITS 2591 and MTH 1200 ; or permission of division chair

This course is designed specifically to prepare students for EGR 2440. Engineering students learn the fundamentals of programming using high level programming language(s). Topics include C++ Language syntax, advanced data types, functions, arrays, pointers, strings, classes, data abstractions and structured programming concepts. Students study concepts of Boolean Algebra that is applied to algorithms to be developed in EGR 2440. Independent study is required every week in the micro-computer lab. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

### ITS-2090 - Computer Security\* (3)

Prerequisite: ITS 1050

ITS-2090 covers the fundamentals of operational security, network security, managing a public key infrastructure (PKI), authentication, access control, external attack, and cryptography. Students learn about the security procedures to protect data in computer environments, the different network attack scenarios, the many tools and procedures used by organizations to protect their resources, and the ethical issues raised by computer security in the business world. This course helps prepare students for the CompTIA Security+ exam. The vendor neutral CompTIA Security+ certification is the acceptable industry-level security certification. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

### ITS-2492 - Programming for the Web Using .NET Technology\* (3)

Prerequisite: ITS 1110

Students learn how to create dynamic Web applications using server-side programming

technologies. The student will use Visual Studio to create ASP.NET Web applications that deliver dynamic content to a Web site utilizing server controls and Web forms. Complex data access tasks will be taught using Web-enabled database concepts, Relational database principles and Structured Query Language (SQL). For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2591 - Computer Science I\* (4)

Prerequisite: ITS 1110 or ITS-1110 Departmental Exam; or Advanced Placement Exam score of 3 in Computer Science A or a score of 4 or 5 in Computer Science Principles.

This first course in object oriented programming provides a comprehensive introduction to the fundamentals of object oriented program design (overloading, data abstraction, inheritance and polymorphism), debugging, and testing. The students learn the concepts of modular object oriented program and algorithm design via various projects throughout the semester. File processing, array manipulation, and elementary searching (sequential and binary) and sorting (selection, insertion, merge) algorithms are introduced. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2592 - Computer Science II\* (4)

Prerequisite: ITS 2591 or ITS 1390

This course builds on the first course training students to better employ advanced data-structures (two dimensional arrays, linked lists, stacks, queues, trees, heaps, priority queues, sets and maps) and algorithms (hashing, quick-sort, heap-sort) to large programming projects. Students learn how to manipulate various data-structures: traversal, insertion, and deletion. Efficiency of various data-structures is explored via worst and average-case time and space analysis. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2645 - Web Server Setup and Security\* (3)

Prerequisite: ITS 1205

Students are introduced to the fundamentals of web server setup, security, and maintenance. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2690 - Web Programming\* (3)

Prerequisite: ITS 1205; and RDG 0800

Students learn to transform web pages into web applications using scripting languages for rapid development of programmable web pages, interactive animation development tools, graphics toolkits to design web pages with the look and feel of desktop applications, and web application frameworks to build rich Internet applications. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2900 - Capstone Experience\* (3)

Prerequisite: completion of 45 credits toward an Information Systems or Information Services Technology certificate or degree, in which 21 credits must be ITS courses; permission of the division chair.

This capstone course provides hands-on and problem solving experience in many areas of information technology. Students consolidate knowledge and skills gained in coursework in this capstone experience. This course focuses on working with actual business problems as represented

in a major case study. Students will be required to complete an individual project, system, program, or research paper which will enhance their skills and marketability. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### ITS-2910 - Cooperative Education I: Computer\* (3)

Prerequisite: completion of 15 credits toward an Information Services Technology certificate or degree of which 12 credits must be ITS courses; permission of the division chair

Cooperative Education allows students to combine academic study with on-the-job experience by working on training assignments coordinated by departmental faculty. The major objective of Cooperative Education is the application of classroom theory in a work environment. This course is intended for students who are pursuing a degree in information Technology. For students who plan to use personal computers, this course may have specific computing requirements. Please refer to the Quick Link for Computing Requirements on the Business and Technology website.

#### MTH-1150 - Precalculus Algebra and Trigonometry\* (4)

Prerequisite: MTH 0970 or higher

This course prepares students for calculus and includes real and complex numbers, relations, polynomial, rational, exponential, logarithmic, circular, and trigonometric functions, vectors and analytic geometry. Graphical interpretations are emphasized throughout the course.

#### MTH-2300 - Introduction to Statistics\* (3)

Prerequisite: MTH 0940 or MTH 0970 or MTH 0900T with permission of division chair

In this introduction to descriptive and inferential statistics, students learn about presentation of data, measures of central tendency and dispersion, the binomial and normal probability distributions, sampling techniques, correlation and regression, and hypothesis testing (z-test, t-test, chi-squared). Examples are selected from education, business, and the social and natural sciences.

#### SCE- 1010- Scientific Reasoning and the Modern World (3)

Students develop scientific literacy through analyzing what is and is not considered science. The steps of the scientific method are explored by analyzing published scientific research and delving into the accomplishments of famous scientists and their work. A history of the ethical dilemmas and critics of science and the scientific method are evaluated. Science is discussed in the context of the modern world through understanding global issues, such as climate science, genetic manipulation, GMOs, and water quality.

## **Program Description for the Catalog:**

Number of Credits: 60-61

The Software Development AAS degree is a technical program designed to prepare students for entry level careers in the in-demand field of programming, software development, and software engineering.

Software developers are the creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or another device. Others develop the underlying systems that run the devices or that control networks.

Programmers write the detailed sets of instructions computers understand and act on. Emphasis is placed on computer information systems, programming language, concepts and designs, logic and theory.

While this program may transfer to some institutions, it is not intended to be a transfer program. Students planning to transfer to a 4-year college should consider the Computer Science AS degree.

The maximum number of credits accepted in transfer from other institutions to this program is 45.

### **Career Opportunities:**

Programmers are needed in almost all sectors of the economy. Job opportunities may include entry level programmer, programmer analyst, software developer, and web applications developer.

### **Student Learning Outcomes:**

Students will...

1. Design, develop, and maintain computer programs written in current and emerging programming languages.
2. Design, develop, and test software for business, scientific, and general computing applications, given user needs.
3. Employ best practices to set up, secure, and maintain web servers.
4. Document every aspect of an application or system as a reference for future maintenance and upgrades.
5. Collaborate with other computer specialists to create optimum software.

## H. Adequacy of any articulation;

There are no articulation agreements for this program.

## I. Adequacy of faculty resources consistent with Regulation .11 of this chapter;

The program will be supported by both full-time and part-time faculty. The program faculty have backgrounds covering a vast area in computing technologies including software development, information technology, computer science, database management, and cybersecurity. The faculty credentials for the lead program faculty are below:

Faculty member name	Terminal degree	Full-time or part-time	Courses taught
Estes, Christopher	MBA	Full-time	ITS 1040, ITS-1120, ITS-1110, ITS 2591, ITS 2592
Hayes, Wendy	M.A.	Full-time	ITS-2090
Jacobs, Ronda	M.A.	Full-time	ITS-2900
Jenkins, Renee	M.S.	Full-time	ITS-1205
Powell, Daphne	M.S.	Full-time	ITS-2910
Wilson, John	M.A.	Full-time	ITS-1040, ITS-1050, ITS-1120
White, Richard	M.S.	Full-time	ITS 1110, ITS 2591, ITS 2592, ITS-2492, ITS-2690
Young, Richard	M.S.	Part-time	ITS 1390

**J. Adequacy of library resources consistent with regulation .12 of this chapter**

Students may borrow circulating materials from any of the three CSM library branches. Through the interlibrary loan program (ILL), students can order almost any book, periodical article, or ERIC document needed, generally available within one week of the request. Library resources also include audiovisual collections use in the library and classrooms only. Additionally, substantial material is available through online databases, including ProQuest and EBSCO.

The President assures that appropriate library resources are available to support the needs of this program.

**K. Adequacy of physical facilities, infrastructure, and instructional equipment consistent with Regulation .13 of this chapter;**

CSM is a leader among Maryland community colleges in offering courses which meet the busy schedules of our students, traditional weekday face to face courses, weekend and evening classes, Web-hybrid courses which offer a mix of online and traditional classroom face-to-face instruction and a popular online learning community. The college makes available state of the art facilities on three campuses to accomplish its mission in support of our community's academic, professional, and self-enrichment pursuits.

The Software Development AAS degree program will be conducted primarily on the La Plata campus, in the ST building, home to the Business and Technology Division. Many classes will also be offered at the Leonardtown and Prince Frederick campuses. Many business classes are offered in the BU building. The ST and BU buildings house state of the art classrooms, conference rooms, faculty and administrative offices, computer labs, Student Computer Support department (help desk) and science laboratories.

The President assures that appropriate physical facilities, infrastructure, and instructional equipment are available to support the needs of this program.

**L. Adequacy of financial resources with documentation consistent with Regulation .14 of this chapter;**

Resource Categories	Year	Year	Year	Year	Year
	1	2	3	4	5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue	\$81,540	\$81,540	\$135,900	\$135,900	\$135,900
(c + g below)					
a. Number of F/T Students	15	15	25	25	25
b. Annual Tuition/Fee Rate (\$151 x 21 credits)*	\$3,171	\$3,171	\$3,171	\$3,171	\$3,171
c. Total F/T Revenue (a x b)	\$47,565	\$47,565	\$79,275	\$79,275	\$79,275
d. Number of P/T Students	15	15	25	25	25
e. Credit Hour Rate	\$151	\$151	\$151	\$151	\$151
f. Annual Credit Hours Rate	15	15	15	15	15
g. Total P/T Revenue	\$33,975	\$33,975	\$56,625	\$56,625	\$56,625
(d x e x f)					
3. Grants, Contracts & Other	0	0	0	0	0
External Sources					
4. Other Sources	0	0	0	0	0
<b>TOTAL (Add 1 – 4)</b>	<b>\$81,540</b>	<b>\$81,540</b>	<b>\$135,900</b>	<b>\$135,900</b>	<b>\$135,900</b>
* The credit hour rate (\$151) is based upon CSM's current tuition rate of \$123 plus 23% combined fee.					

Expenditure Categories	Year	Year	Year	Year	Year
	1	2	3	4	5
1. Faculty (b + c below)	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000
a. # FTE	1 FT x 5 courses & 2 Existing Courses	2 FT x 5 courses & 2 Existing Courses	3 FT x 5 courses & 2 Existing Courses	4 FT x 5 courses & 2 Existing Courses	5 FT x 5 courses & 2 Existing Courses
b. Total Salary	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000
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)	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000

**M. Adequacy of provisions for evaluation of program consistent with Regulation .15 of this chapter;**

OAP’s focus is the primary mission of the college: to provide quality opportunities for intellectual development that result in student learning. The SLOAP outlines the process of collecting information to determine whether CSM’s academic offerings are having the appropriate educational impact on students. Student Learning Outcomes Assessment (SLOA) is defined as the systematic collection of information about academic offerings and analysis thereof, for the purpose of improving student learning.

Program Assessment at CSM is a cyclical process that includes:

1. Program Reviews conducted every five-six years, or more often as needed.
2. Academic certificate programs are included within the review of degree programs.
3. Program Monitoring conducted every other year (except in the year of a Program Review).
4. Program Assessments of Student Learning conducted on a cycle established by faculty.

In addition, CSM conducts course evaluations every semester or, more often when deemed necessary

**N. Consistency with the Commission's minority student achievement goals; and**

One of CSM’s Values/Guiding Principles is Diversity. The Institutional Equity and Diversity Office works to “create an environment that instills an appreciation and understanding of the diverse qualities each of us brings to this campus; where our students, staff, and faculty mirror the community we serve and are free from discrimination and harassment.”



Additionally, CSM defines civility as “the demonstration of respect for others through basic courtesy and the practice of behaviors that contribute toward a positive environment for learning and working.”

As is true of CSM, the Software Development AAS Program is open to all students with no restrictions reference to age, gender, or ethnic background. As such, any student meeting the eligibility requirements of the college admissions process is entitled to enroll in this discipline of study. Furthermore, CSM, the Business, Technology, and Public Services Division, and representatives of the Software Development AAS Program all participate in events, programs, orientations, and information sessions sponsored internally or by external advocates in order to reach all students seeking information on the college’s programs and the professional opportunities that result from that education and training.

CSM’s marketing department is developing a comprehensive marketing plan for this new program. These resources include the designing and printing of brochures, assistance with marketing campaigns (web and traditional news media), and development of other recruitment materials. CSM is committed to ensuring new programs are marketed to diverse populations, as demonstrated by the organizational values, which include valuing diversity. Marketing plans will include activities specifically designed to market the program to the diverse population of the tri-county region.

Diversity and multiculturalism are vitally important issues for future leaders. As such, the representatives of this new program at CSM intend to make contact with multiple professional associations, national, regional and local employers, secondary and postsecondary institutions to create partnerships that will lead to the diversity of our student population and graduates of our programs.

**O. Relationship to low productivity programs identified by the Commission.**

The proposed degree is not directly related to an identified low productivity program identified by the Commission.

**P. If proposing a distance education program, please provide evidence of the Principles of Good Practice (as outlined in COMAR 13B.02.03.22C)**

This program will not be offered as a distance education program.