Your time. Your place.
Chesapeake College

June 3, 2020

James D. Fielder, Jr., Ph.D.
Secretary of Higher Education
Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201

Dear Dr. Fielder:

Attached, please find Chesapeake College's request to add a new associate degree program, Computer Science Technology – A.A.S. The new program consolidates four existing computer information system programs, each with a specific area of concentration, into one track. The new design allows students increased flexibility in selecting from a wider range of electives based on their fields of interest. This consolidation also ensures that courses are more likely to run, therefore providing a clearer path to completion.

The four discontinued programs include: Computer Information Systems – Digital Administrative Assistant Area of Concentration, Computer Information Systems – Social Media Specialist Area of Concentration, Computer Information Systems – Web Design Area of Concentration, and Computer Information Systems – PC & Network Management Area of Concentration. A formal request for the discontinuance of these programs was submitted in mid-May.

A check in the amount of $1,650 was mailed to cover the fees associated with this transaction and additional changes as noted in the letter that accompanies the check.

If you have any questions or require additional information, please contact Marci Leach, Director of Program Development, at mleach@chesapeake.edu or 410-827-5824.

Sincerely,

David Harper, Jr.
Vice President for Workforce and Academic Programs

Office Use Only: PP#

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

Institution Submitting Proposal	Chesapeake College

Each action below requires a separate proposal and cover sheet.

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

Payment Submitted: (●) Yes ( ) No Payment Type: ( ) R*STARS ( ) Check Payment Amount: $850.00 Date Submitted:

Department Proposing Program	Workforce & Academic Programs	
Degree Level and Degree Type	Associate's Degree - A.A.S.	
Title of Proposed Program	Computer Science Technology	
Total Number of Credits	60	
Suggested Codes	HEGIS: 5103.01	CIP: 11.9990
Program Modality	(●) On-campus ( ) Distance Education (*fully online*)	
Program Resources	(●) Using Existing Resources ( ) Requiring New Resources	
Projected Implementation Date	(●) Fall ( ) Spring ( ) Summer	Year: 2020
Provide Link to Most Recent Academic Catalog	URL: (not currently on the website)	
Preferred Contact for this Proposal	Name: Marci Leach	
	Title: Director of Program Development	
	Phone: (410) 827-5824	
	Email: mleach@chesapeake.edu	
President/Chief Executive	Type Name: David A. Harper, Jr.	
	Signature: [signature]	Date: 06/05/2020
	Date of Approval/Endorsement by Governing Board:	

Revised 4/2020

MARYLAND HIGHER EDUCATION COMMISSION

New Academic Degree Program

Computer Science Technology

A. Centrality to institutional mission statement and planning priorities:

Chesapeake College's core commitment is to prepare students from diverse communities to excel in further education and employment in our region and beyond. Our Career and Technology Education (CTE) programs and services are designed with our regional economic development and sustainability in mind. In addition, the college is committed to the support of workforce development by providing the courses and training needed to build a skilled labor force.

The Chesapeake College 2019-2024 Strategic Plan explicitly calls for strengthening the regional economy notably by, "providing meaningful face –to-face and online educational programming and support that anticipates and meets the needs and expectations of our students and our region"[1]. In our region, throughout the state of Maryland and beyond, the computer science field is one of the fastest growing and highest paying career paths and is showing no signs of slowing down. The proposed Computer Science Technology has been restructured to align the curriculum with current trends and programmatic content to position our students for success in this ever evolving field.

The Strategic Plan also shares the goal to "serve as the connector for regional development and innovation on the Eastern Shore.[2]" The proposed Computer Science Technology curriculum was created in collaboration with program advisory committees (PAC) and industry professionals to ensure that industry skills, leading to the appropriate certification, are infused within each course. Technology is at the heart of the College's fourth strategic mission and it is essential that programs provide students the technological skills necessary to maximize their potential within the workforce.

[1] "The Peake Plan" (2019-2024) Chesapeake College Strategic Plan.
[2] "The Peake Plan" (2019-2024) Chesapeake College Strategic Plan.

The revised Computer Science Technology program consolidates four existing Computer Information Systems programs, each with a specific area of concentration: Digital Administrative Assistant, Social Media Specialist, Web Design, and PC & Network Management. The newly designed program is a single, flexible program that will allow for students to complete the program using courses aligned with their specific area of interest and career goals.

The program will be staffed with existing faculty members, adjunct faculty, and administrative support and facility resources.

B. Critical and compelling regional or statewide need as identified in the State Plan:

The 2017-2021 Maryland State Plan for Post-Secondary Education has identified several key strategies. The proposed Computer Science Technology program supports the following strategies:

1. **Strategy 1**: "*Continue to improve college readiness among K-12 students, particularly high school students".* Chesapeake College works closely with the high schools within the five-county service region to provide dual enrollment for students interested in the computer science field. Representatives from the College admission team regularly meet students within their school, on the college campus and during college hosted events to discuss program pathways. This early exposure to technology focused career paths, and the conversations about entry requirements, allows students to better understand the necessity of maintaining a strong GPA, among other essential school performance measures. Students within the five county service region can take advantage of articulation agreements that allow students to earn college credits while still in high school. The early opportunity for college training allows students to complete the necessary program pre-requisites during the high school years, saving time and money.
2. **Strategy 5:** "*Ensure that statues, regulations, policies, and practices that support students and encourage their success are designed to serve the respective needs of*

both traditional and non-traditional students". The Computer Science Technology program is designed to allow students to select courses within the larger framework of the program that align with their particular interests and career goals. In addition, students with prior computer certifications have the opportunity for course exemption based on Prior Learning Assessments allowing them to move through the program at a faster pace, preventing course duplication.

3. **Strategy 6:** *Improve the student experience by providing better options and services that are designed to facilitate prompt completion of degree requirements.* By allowing students to select their courses based on area of interest and/or transfer institution, there is a higher likelihood of completion versus the more regimented program format that provided little room for course negotiation. Students also have the opportunity to explore a variety of different courses within the program while still moving toward the overall degree completion goal.
4. **Strategy 7**: "*Enhance career advising and planning services and integrate them explicitly into academic advising and planning*". Research has indicated that career advising is just as critical to student success as academic advising. Because of this, Chesapeake College has invested significant internal resources to improve the overall student advising experience. Career Coach is an innovative program designed to help students align their career vision with an educational pathway. Through this interactive software and subsequent advising meetings, students assess their strengths and interests and explore the various careers that others, with their similar preferences, have participated in. The site includes salary data, required educational level and the career pathways within the college. In addition, program directors and faculty members provide mentorship to students within their field of stud. Students are provided ample interaction with regional employers through the career fairs, internship and faculty advising.
5. **Strategy 8**: "*Develop new partnerships between colleges and businesses to support workforce development and improve workforce readiness*". Chesapeake College's strategic mission includes serving as the connector for regional development and innovation. Specifically, our charge calls to "strengthen

existing partnerships within the region"[3]. The College regularly interacts with Program Advisory Committees (PAC) which include community members with knowledge and expertise in the computer technology industry. The PAC groups advise program directors on current and emerging industry trends, certifications that are relevant within the industry, and pertinent workforce needs in an attempt to align programming with regional economic needs. In addition, the PAC groups advocate for the program and help connect students to community resources including internships. Chesapeake College's newly designed Computer Science Technology course embeds certification preparation throughout the coursework. Upon the completion of specific coursework, students are prepared to take a variety of CompTIA and Microsoft certifications including: A+ Core 1, A+ Core 2, Network, Security +, Linux +, Word, Excel, and/or PowerPoint. These recent changes were a direct result of industry collaborations.

C. Quantifiable & reliable evidence and documentation of market supply & demand in the region and State:

The proposed Computer Science Technology program enhances Chesapeake College's support for the growth of STEM programs within the region. The occupational projections shared below reflect growth within specific computer fields however, because most careers require some degree of computer literacy, the skills embedded within the program are woven throughout every industry in the 21st century workforce.

[3] "The Peake Plan" (2019-2024) Chesapeake College Strategic Plan.

[4]

Maryland Long Term Occupational Projections (2016 - 2026)

Occupation (keyword search)
Contains "computer"

Number of Openings
All values

Percent Change
All values

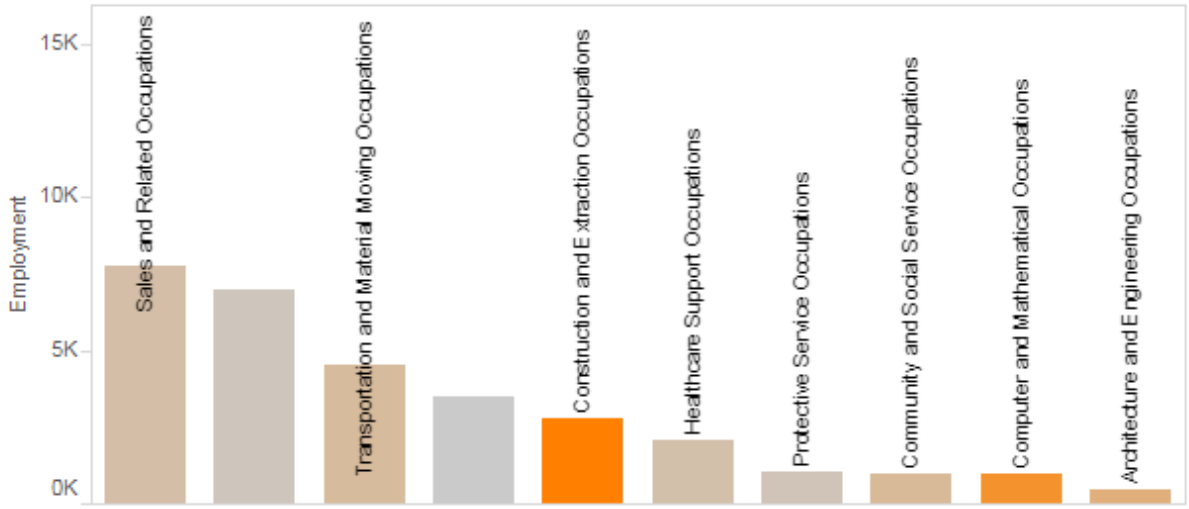
Occupation	2016	2026	Change	Pct Change
Computer Hardware Engineers	4,031	4,274	243	6.03%
Computer Network Architects	5,395	5,820	425	7.88%
Computer Network Support Specialists	8,146	8,655	509	6.25%
Computer Numerically Controlled Machine Tool Programmers, Metal and ..	172	174	2	1.16%
Computer Occupations	117,471	125,310	7,839	6.67%
Computer Occupations, All Other	14,459	14,778	319	2.21%
Computer Operators	1,055	1,114	59	5.59%
Computer Programmers	5,957	6,427	470	7.89%
Computer Science Teachers, Postsecondary	438	471	33	7.53%
Computer Systems Analysts	14,950	16,080	1,130	7.56%
Computer User Support Specialists	11,044	11,777	733	6.64%
Computer and Information Research Scientists	2,559	2,658	99	3.87%
Computer and Information Systems Managers	8,979	9,544	565	6.29%

[4] Maryland Occupational Projections - 2016-2026 - Workforce Information and Performance

Upper Shore Workforce Region

Top 10 Growth Occupations

(Darker hue indicates higher over the year growth)

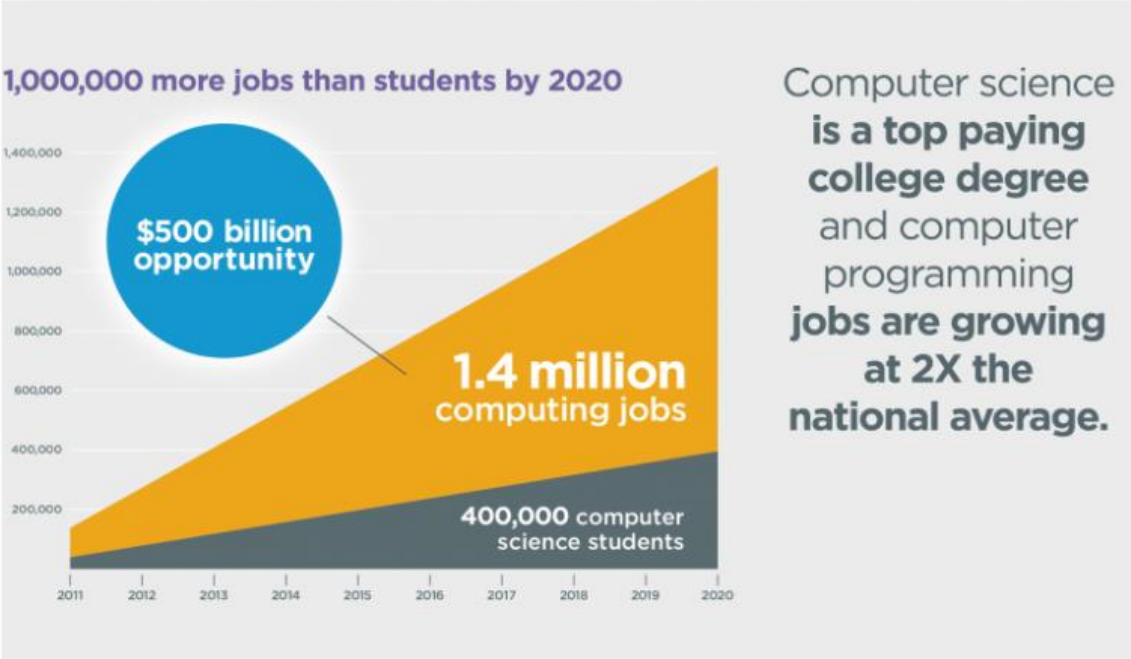


Occupation	Employment	Growth	LQ	Salary
Construction and Extraction Occupations	2,810	12.14%	1.03	$41,465
Computer and Mathematical Occupations	970	10.96%	0.33	$82,753
Architecture and Engineering Occupations	480	8.77%	0.34	$64,368
Community and Social Service Occupations	1,000	7.82%	0.99	$47,266
Transportation and Material Moving Occupati..	4,540	7.68%	1.20	$35,510
Sales and Related Occupations	7,760	7.34%	1.24	$37,466
Healthcare Support Occupations	2,080	7.21%	1.18	$31,403

Using 2017 OES data, with 2014 OES data as a base for growth. Growth shown is an annual average.
Highlighted rows indicate an average yearly salary higher than the Workforce Region Mean of $43,829.

[5]

[5] Upper Shore - Maryland's Growth Occupation Tool - Workforce Information & Performance



D. Reasonableness of program duplication:

Computer Science Technology programs are currently offered through other colleges and organizations within the state. However, Chesapeake College is well suited to be the primary provider to students within our five county service region.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs)

The Computer Science Technology program has no impact, negatively or positively, on programs at HBIs. However, the coursework will prepare students for further education both at HBI and/or other institutions.

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

The Computer Science Technology program has no impact, negatively or positively, on programs at HBIs.

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

The Computer Science Technology program is designed to prepare students for immediate employment in any occupation that desires highly skilled workers, particularly in the computer

technology field. Furthermore, educating students in computer science is beneficial for any field that requires logical thinking and problem-solving, all which are a part of the computer science curriculum. In addition, the majority of job openings require a certain degree of computer based knowledge and this trend is growing in every industry and in every state; job openings in the computer related fields are projected to grow at twice the rate of any job.

Chesapeake College's proposed Computer Science Technology program will provide students with a foundation in programming, hardware, software, and web design as well as a working knowledge of ethics in the field. In addition to taking the program core courses, students can focus their Computer Science Technology degree with further study based on their choice of electives. Classes include hands-on learning through student projects/labs and incorporate the use of online tools and (free) software. Specialized programing, for example Python, and the use of 3d printing has been added to the foundational course to further enhance the quality of the program and the relevancy to the industry.

Computer Science Technology:

Fall I

CST 109 Introduction to Computers	4 credits
CST 102 Introduction to PowerBI & MySQL	3 credits
Program Elective	3 Credits
MAT 107 Foundations of Mathematics (G.Ed.)	3 credits
FSC 101 Freshman Seminar Course	1 credit
CPL 105 Career Planning and Preparation	1 credit

Spring I

CST 119 Python 1 & Problem Solving	4 credits
Program Elective	3-4 Credits
Program Elective	3-4 Credits
ENG 101 Composition (G.Ed.)	3 credits
Social/Behavioral Sciences (G.Ed.)	3 credits

Fall II

CST 208	HTML & Web Design	4 credits
Program Elective		3-4 Credits
Bio/Natural Sciences (G.Ed.)		3-4 credits
Arts & Humanities (G.Ed.)		3 credits

Spring II

CST 217	Ethics for IT	3 credits
Program Elective		3-4 Credits
Program Elective		4 Credits
CPL 280	Cooperative Work Experience	3 credits
General Education Elective (G.Ed.)		3 credits

MINIMUM REQUIRED CREDITS: 60

Program Electives: Students must take a minimum of 19 credits from this list of program electives

CST 125	Microsoft Office Applications	3 credits
CST 130	Adobe Photoshop	3 credits
CST 143	Operating Systems	3 credits
CST 145	Computer Hardware	3 credits
CST 154	Linux	3 credits
CST 220	HTML II & Responsive Web Design	4 credits
CST 234	Advanced Web Design	3 credits
CST 243	Microsoft Windows Server	3 credits
CST 245	Computer User Support	3 credits
CST 250	Computer Networks	3 credits
CST 257	Computer Security	3 credits
CST 269	Python II	4 credits
CST 279	Python III	4 credits
COM 170	Introduction to Journalism and News Media	3 credits
MAT 110	Finite Mathematics	3 credits

New Course Descriptions:

CST 102 - Introduction to PowerBI & MySQL
3 credits
An interactive approach to the manipulation and visual representation of data. Topics include basic database concepts, design, relational database creation, SQL queries, data modeling, visualization, reports, and dashboards. The course provides a framework that can be used for the application of data analysis to general business problems. [FALL] Two hours lecture, two hours laboratory per week.

CST 109 - Introduction to Computers
4 credits
A foundational survey course in computers. Course covers an introduction to programming, hardware, software, associated mathematical concepts, applications, internet resources, physical computing, and 3D-printing. [FALL/SPRING] Three hours lecture, two hours laboratory per week.

CST 119+ – Python I & Problem Solving
4 credits
A foundation in Python programming and problem solving. Topics include pseudo code, logic, flow charts, syntax, IDE's, libraries, data types, operators, loops, functions, decision & condition statements, lists, debugging, and the use of algorithms. Other topics include an introduction to computer graphics programming. [SPRING] Three hours lecture, two hours laboratory per week.
Prerequisite(s): CST 109 & MAT 031+.

CST 125 – Microsoft Office Applications
3 credits
A thorough exploration of the features and capabilities of Microsoft Word, Microsoft Excel & Microsoft PowerPoint. Word topics include document formatting, lists, tables, references, and graphical elements. Excel topics include spreadsheet development, organizing data, formulas, graphics and charts. MS PowerPoint topics include designing presentations, formatting, tables, charts, transitions and animation.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as the Microsoft Office Specialist. [FALL/SPRING] Two hours lecture, two hours laboratory per week.

CST 130 - Adobe Photoshop
3 credits
A study in creating and manipulating digital images using Adobe Photoshop. Topics include an exploration of software interface, creating, editing, and manipulating digital images, design principles and techniques. An introduction to Adobe Illustrator and digital illustration will be provided.
Note: Upon completion of this course students may elect on their own to further prepare for and take a related industry exam. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [FALL ODD] Two hours lecture, two hours laboratory per week.

CST 143+ - Operating Systems
3 credits

An introduction to operating systems including Windows, Linux and Mac OS. Topics include operating system (capability, installation, configuration, troubleshooting, and security), and a review of computer hardware concepts.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as the CompTIA A+ Core 2. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [FALL] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 109. Co-requisite(s): CST 109.

CST 145+ – Computer Hardware
3 credits
A comprehensive study of computer hardware. Topics include hardware installation and configuration, networking configuration, troubleshooting, mobile devices, and virtualization. A review of operating systems is also included.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as the CompTIA A+ Core 1. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [SPRING] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 109. Co-requisite(s): CST 109.

CST 154+ - Linux
3 credits
A comprehensive study of the Linux operating system. Topics include boot process, installation, configuration, kernel modules, user management, security practices, system properties, networking, and BASH scripts.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as CompTIA Linux+. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [SPRING] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 143+.

CST 208+ – HTML I & Web Design
4 credits
A foundational course in web design and development. Topics include HTML, CSS, JavaScript, design principles, web software, and FTP. [FALL] Three hours lecture, two hours laboratory per week.
Prerequisite(s): CST 109.

CST 217+ - Ethics for IT
3 credits
A study of ethics in IT. Topics include ethical principles, decision making, laws, and responsibilities related to IT. The course also covers the ethical use of data in the modern age and ethical applications of technology. [SPRING] Three hours lecture per week.
Prerequisite(s): CST 109.

CST 220+ – HTML II & Responsive Web Design
4 credits

A continuation in study of HTML and web design. Topics include advanced HTML & CSS concepts, web development software & resources, and more advanced design principles and techniques.
[AS NEEDED] Three hours lecture, two hours laboratory per week.
Prerequisite(s): CST 208+.

CST 234+ – Advanced Web Design
3 credits
A capstone course in web design and development. Topics include prototyping, web animations, intellectual property, digital illustrations, and incorporating video into web designs. GUI web development and open source software will also be covered. [AS NEEDED] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 130 & CST 208+.

CST 243+ - Microsoft Windows Server
3 credits
A study in Microsoft Windows Server. Topics include installation, storage, Hyper-V, containers, and recovery. Additional topics include remote access and network protocols, connectivity & infrastructure.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as the Microsoft Windows Server. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center.
[AS NEEDED] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 143+.

CST 245+ - Computer User Support
3 credits
A study of user support and help desk operations for IT professionals. Topics include support basics, user support principles, help desk services & operations, ethical behavior, ergonomics, product evaluation, troubleshooting, and incident management. [AS NEEDED] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 143 & CST 145.

CST 250+ – Computer Networks
3 credits
A study of computer networking. Topics include network protocols, infrastructure, operations, security, tools, & troubleshooting.
Note: Upon completion of this course students may elect on their own to further prepare for and take an operating systems related industry exam such as the CompTIA Network+. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [AS NEEDED] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 143+ & CST 145+.

CST 257+ – Computer Security
3 credits
A study of computer security. Topics include network security, data security, operational security, securing devices, cryptography, and risk mitigation.

Note: Upon completion of this course students may elect on their own to further prepare for and take a computer security related industry exam such as the CompTIA Security+. Industry exams require a fee to be paid for by the student and are to be taken at a certified testing center. [AS NEEDED] Two hours lecture, two hours laboratory per week.
Prerequisite(s): CST 250+.

CST 269+ – Python II
4 credits
A continued study in Python. Topics include algorithm design, functions, loops, input validation, composite data types, tuples vs. lists, libraries, IDEs, and string manipulations. Other topics include structured, functional, object-oriented, interactive & GUI programming. [AS NEEDED] Three hours lecture, two hours laboratory per week.
Prerequisite(s): CST 119+ & MAT 107+.

CST 279+ – Python III
4 credits
A focus on graphical user interface (GUI) programming concepts using Python. Topics include: widgets, appearance, layout methods, event & exception handling, interactive programming, IPO, libraries, and the help utility. [AS NEEDED] Three hours lecture, two hours laboratory per week.
Prerequisite(s): CST 269+ & MAT 107+.

The Computer Science Technology program will be assessed in accordance with Chesapeake College's program review process as outlined in the College Curriculum Guide.[6]

Program Goals: The Computer Science Technology program will:

- Facilitate proficiency in content knowledge and skills for the College's general education competencies.
- Promote technical competency, professional knowledge and ethical responsibility.
- Prepare students for certification exams in the technology industry.
- Prepare students for successful careers in the computer science technology field or for further study in the field.

Student Learning Outcomes: Upon successful completion of the program, students will:

- *Web* – Design and develop for the web.
- *Tech* – Employ hardware and software in technological scenarios.

[6] Chesapeake College. *Chesapeake College Curriculum Development Guide*. 2016.

- *Programming* – Apply programming skills to solve problems.
- *Critical Thinking* – Apply programming skills to solve problems.
- *Communication* – Communicate technical information.
- *Technical Information Analysis* – Interpret technical information.

The Computer Science Technology program will be fully supported through the college's marketing initiatives; all correlating materials accurately and concisely represent the program.

H. Adequacy of articulation

The Computer Science Technology A.A.S. Degree is not designed for transfer; it is created to provide the essential skills for immediate employment. However, there are opportunities to apply some coursework or the whole degree to a bachelor's program. Chesapeake College has articulation agreements with a wide array of four-year in-state and out of state institutions specifically for our A.A.S. degrees.

I. Adequacy of faculty resources (as outlined in COMAR 13B.02.03.11).

Program Director: Dr. Lanka Elson holds a Doctor of Computer Science - Emerging Media and masters' degree, both from Colorado Technical University, and a bachelor's degree from Colorado State University. Dr. Elson has over 19 years of college/university level teaching experience and 11 years of experience at the secondary education level. She was voted "Rookie Faculty of the year Chesapeake College" in 2016 due to her exemplary commitment to not only her field of study but also to the students within the discipline. Dr. Elson taught at Colorado Technical University for 16 years, where she developed the first 3D printing class at the institution. She mentored a senior student in designing a 3D printed prosthetic tortoise shell. The innovation received worldwide publicity and acclaim.

Instructor: Jacque Blevins holds a Master of Science – Information Systems Technology, Masters of Business Administration (MBA) – Management Information Systems. She has over 20 years of experience in the field of education including three years of teaching experience at the college/university level.

Instructor: Pam McGovern holds a Master of Science - Information Systems from American University.

Both adjuncts have provided over 30 credit hours of instruction at Chesapeake College and are well acclimated to the program and college infrastructure.

Courses within the program are led by the instructors referenced:

	NEW CST Courses	Credits	Lec	Lab	Instructor
Course #	Course Title				
CST 109	Introduction to Computers	4	3	2	Elson - Full Time Professor
CST 125	Microsoft Office Applications	3	2	2	Blevins - adjunct
CST 119	Python I & Problem Solving	4	3	2	Elson - Full Time Professor
CST 102	Introduction to PowerBI & MySQL	3	2	2	McGovern - adjunct
CST 143	Operating Systems	3	2	2	Elson - Full Time Professor
CST 243	Microsoft Windows Server	3	2	2	Adjunct
CST 145	Computer Hardware	3	2	2	Elson - Full Time Professor
CST 269	Python II	4	3	2	Elson - Full Time Professor
CST 279	Python III	4	3	2	Elson - Full Time Professor
CST 250	Computer Networks	3	2	2	Adjunct
CST 154	Linux	3	2	2	McGovern - adjunct
CST 245	Computer User Support	3	2	2	Elson - Full Time Professor
CST 257	Computer Security	3	2	2	Adjunct
CST 217	Ethics for IT	3	3	0	Blevins - adjunct
CST 208	HTML I & Web Design	4	3	2	Elson - Full Time Professor
CST 130	Adobe Photoshop	3	2	2	Elson - Full Time Professor
CST 220	HTML II & Responsive Web Desig	4	3	2	Elson - Full Time Professor
CST 234	Advanced Web Design	3	2	2	Elson - Full Time Professor

J. Adequacy of library resources (as outlined in COMAR 13B.02.03.12).

The library of Chesapeake College provides students, faculty and community members with various resources to meet their informational and research needs and supports the programs that make up the current curriculum offerings. The library has a collection of 30,000 print titles, more than 300,000 e-books, 1,500 audiovisual materials, 50 print serial subscriptions, and over 100,000 electronic print serials. The library subscribes to over 50 databases providing full-text material, bibliographic citations, images, audio, and films. In addition to the resources listed above, Chesapeake College is accumulating textbooks/reference books specific to the computer science industry including Tkinkter, Pygame and Python.

The library is a member of the Upper Eastern Shore Library Consortium which provides for resource sharing among the college and local public libraries. This program allows our patrons to borrow from public and academic libraries throughout the State of Maryland. Information about the college's library resources is found at http://info.chesapeake.edu/lrc/library. The President has affirmed that the program can be implemented within existing library resources.

K. Adequacy of physical facilities, infrastructure and instructional equipment (as outlined in COMAR 13B.02.03.13)

The classroom(s) used for the Computer Science Technology program are designed to support a variety of learning styles and contain all the necessary instructional features conducive for the delivery of content in several formats. The primary classroom used for instruction was recently renovated to update the electrical needs and network drops. In addition, the room contains a computer to student ratio of one to one. The learning space is equipped with a station dedicated for setting up Raspberry Pi computers and circuit boards scanners, laser printers, screen projection and an updated LCD projector, and a Lulzbot Mini 2 – 3D printer. A wide array of software is installed for student use including: Windows 10, MS Office 2016, Filezilla, IDLE 3.X for Python, Pygame, Notepad++, Cura, Real VNC, Chrome browser, Firefox browser, Maya, Adobe CC Suite and Screencast-o-Matic.

Chesapeake College students also have access to a computer lab used for the Computer Science Technology program, which is equipped with the computers, external hard drives, high capacity

flash drives, workbench computers (used for building PC's, configuration & loading operating systems), laser printers, and installation materials (used for operating system installations). Student computers are equipped with software such as: Windows 10, MS Office 2016, Filezilla, IDLE 3.X for Python, Oracle Virtual Box, Antivirus, Screencast-o-Matic, Chrome browser and Firefox browser.

L. Adequacy of financial resources with documentation (as outlined in COMAR 13B.02.03.14)

TABLE 1: PROGRAM RESOURCES AND NARRATIVE RATIONALE

1. **Reallocated Funds**: This program will utilize existing faculty resources and administrative staff.

2. **Tuition and Fee Revenue**: We are projecting no more than a 2% tuition increase each year.

3. **Grants and Contracts**: While the tuition and course fees are designed to cover the immediate costs of the program, additional grants and private donations are anticipated to assist with site overhead and infrastructure needs.

4. **Other Sources**: Other sources of revenue include Consolidated Fees, $35 per credit hour, this fee helps cover the cost of the academic support center, student activities, technology and the general expenses of the college; Capitol Improvement fees, $15 per registration transaction, this fee supplements county funds for facility improvements and equipment upgrades for projects that do not meet the threshold for State funding; and Registration fees, $10 per registration transaction, this fee defrays cost of clerical support and supplies for registration processing.

5. **Total Year**: *Program Resources and Narrative Rationale table on following page*

TABLE 1: RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	$0	$0	$0	$0	$0
2. Tuition/Fee Revenue (c + g below)	$109,000	$134,874	$162,760	$191,786	$221,952
a. Number of F/T Students	28	33	38	43	48
b. Annual Tuition/Fee Rate	$3,250	$3,302	$3,380	$3,458	$3,536
c. Total F/T Revenue (a x b)	$91,000	$108,966	$128,440	$148,964	$169,728
d. Number of P/T Students	12	17	22	27	32

e. Credit Hour Rate	$125	$127	$130	$133	$136
f. Annualized Credit Hour Rate	$1,500	$1,524	$1,560	$1,596	$1,632
g. Total P/T Revenue (d x e x f)	$18,000	$25,908	$34,320	$43,092	$52,224
3. Grants, Contracts & Other External Sources	$0	$0	$0	$0	$0
4. Other Sources	$32,520	$39,670	$46,820	$53,970	$61,120
TOTAL (Add 1 – 4)	$141,520	$174,544	$209,580	$245,756	$283,072

We are projecting a tuition increase of no more than 2% per year. Other sources of revenue include Consolidated Fees[7] of $35/credit hour; Registration Fees[8] of $10 per registration transaction; and Capital Improvement Fees [9] of $15 per registration transaction. In addition, we anticipate a 20% growth in enrollment each year as the program grows in popularity and marketing campaigns are enhanced.

TABLE 2: PROGRAM EXPENDITURES:					
Expenditure Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Faculty (b + c below)	$84,100	$85,719	$87,004	$88,308	$89,632
a. Number of FTE	1.00	1.00	1.00	1.00	1.00
b. Total Salary	$70,000	$71,050	$72,115	$73,196	$74,293
c. Total Benefits	$14,100	$14,669	$14,889	$15,112	$15,339
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

[7] Other Sources: Consolidated Fee: The consolidated fee helps cover the cost of the academic support center, student activities, technology and the general expenses of the college. This fee also covers use of the physical education facilities and equipment which all students have access to.

[8] Other Sources: Registration Fee: Defrays cost of clerical support and supplies for registration processing.

[9] Other Sources: Capital Improvement Fee: Supplements county funds for facility improvements and equipment upgrades. These projects do not meet the threshold for State funding.

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& Equip.	$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					
TOTAL (Add 1 – 7)	$84,100	$85,719	$87,004	$88,308	$89,632

The program will be implemented with existing administrative staff and campus resources. Campus resources are funded through the College's general operating budget each year. Salaries are forecasted to increase 1.5% each year, while health benefits are forecasted to increase 2.5% each year.

M. Adequacy of provisions for evaluation of program (as outlined in COMAR 13B.02.03.15).

The college uses a five-year internal program review process for all of its courses and its programs. Additionally, all courses are reviewed annually with student opinion surveys. All courses and programs implement faculty developed and approved assessment plans to monitor student mastery of all identified course and program goals and student learning outcomes. Each program also makes use of a program advisory board with membership consisting of college faculty, administration, area business representatives, and local leaders from the skilled trades industry. This program is not evaluated by external entities.

N. Consistency with the State's minority student achievement goals (as outlined in COMAR 13B.02.03.05 and in the State Plan for Postsecondary Education).

Chesapeake College continues to utilize outreach strategies to feeder high schools and to communities with high concentrations of minority populations. The College has a strong dual enrollment program which will be used to encourage early decisions about career goals and career exploration. Also the college, working in cooperation with the local county schools, has initiatives such as grow your own programs, community mentors, and new financial incentives, to recruit and retain more minority students. The college has an aggressive "early alert" system as part of its student retention initiatives.

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

This program is not related to low productivity programs identified by the Commission.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

Chesapeake College follows C-RAC guidelines for distance education.