



April 13, 2022

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 lower division certificate entitled Pre-Veterinary Technology Certificate.

- HEGIS: 5206.05
- CIP: 51.0808

A check, in the amount of \$850, was mailed to cover the fees associated with this transaction.

If you have any questions or require additional information, please contact Marci Leach, Director of Program Development, at [mleach@chesapeake.edu](mailto:mleach@chesapeake.edu) or 410-829-9811.

Sincerely,

David Harper, Jr.

Vice President for Workforce and Academic Programs

P.O. Box 8 | Wye Mills, MD 21679  
[www.chesapeake.edu](http://www.chesapeake.edu)



Office Use Only: PP#

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

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

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

Payment <input checked="" type="radio"/> Yes	Payment <input type="radio"/> R*STARS #	Payment Amount: 850.00	Date Submitted:
Submitted: <input type="radio"/> No	Type: <input type="radio"/> Check #		

Department Proposing Program	STEM		
Degree Level and Degree Type	Lower Division Certificate		
Title of Proposed Program	Pre Veterinary Technology Certificate		
Total Number of Credits	34		
Suggested Codes	HEGIS: 5206.05	CIP: 51.0808	
Program Modality	<input checked="" type="radio"/> On-campus	<input type="radio"/> Distance Education ( <i>fully online</i> )	
Program Resources	<input checked="" type="radio"/> Using Existing Resources	<input type="radio"/> Requiring New Resources	
Projected Implementation Date	<input checked="" type="radio"/> Fall	<input type="radio"/> Spring	<input type="radio"/> Summer Year: 2022
Provide Link to Most Recent Academic Catalog	URL: (program will be in the catalog July 2022)		

Preferred Contact for this Proposal	Name:	Marci Leach
	Title:	Director of Program Development
	Phone:	(410) 829-9811
	Email:	mleach@chesapeake.edu

President/Chief Executive	Type Name:	David A. Harper, Jr.
	Signature:	Date: 04/06/2022
	Date of Approval/Endorsement by Governing Board:	12/15/2021

Revised 1/2021

## MARYLAND HIGHER EDUCATION COMMISSION

### New Academic Degree Program

### Pre-Veterinary Technology Certificate

#### 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 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 proposed Pre-Veterinary Technology Certificate supports this initiative by providing students with the foundation and skill set necessary to continue their education in a Veterinary Technology or an Animal Science program with a college or university that grants an Associate or Baccalaureate Degree.

The Pre-Veterinary Technology Certificate supports Chesapeake College's core initiative, to "expand partnerships and agreements with service-area high schools and Maryland four-year institutions"<sup>1</sup> as the program is intended for those students who will transfer to a two or four-year partner. Chesapeake College will continue to create these partnerships to ensure a seamless transfer for the student.

#### 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 The Pre-Veterinary Technology Certificate supports the following strategies:

1. **Strategy 4:** *Continue to ensure equal educational opportunities for all Marylanders by supporting all postsecondary institutions.*<sup>2</sup>

The Pre-Veterinary Technology Certificate promotes inclusion and diversity within higher education and the workplace. The program is intentionally designed to be a stand-alone certificate yet students could also continue with an Associate's degree in Chesapeake's Biological Sciences program based on their educational goals.

2. **Strategy 5:** *"Ensure that statutes, 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".*<sup>3</sup> The Pre-Veterinary Technology Certificate is designed to allow students

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<sup>1</sup> "The Peake Plan" (2019-2024). Chesapeake College Strategic Plan.

<sup>2</sup> Maryland State Plan for Post-secondary Education (2017-2021). Maryland Higher Education Commission.

<sup>3</sup> Maryland State Plan for Post-secondary Education (2017-2021). Maryland Higher Education Commission.

multiple points of entry ranging from high school graduates to adults working in the animal care field. In addition, students completing the core coursework of the program can be eligible to take state certification exams or transfer into a two or four-year program to continue their studies.

3. **Strategy 6:** *Improve the student experience by providing better options and services that are designed to facilitate prompt completion of degree requirements.*<sup>4</sup> Through articulations with high school CTE programs and two and four-year institutions, the Pre-Veterinary Technology Certificate is designed to meet the needs of the individual student. This provides a logical pathway with the necessary coursework for a variety of pathways, based on the students' preferences and career goals.
4. **Strategy 7:** *“Enhance career advising and planning services and integrate them explicitly into academic advising and planning”.*<sup>5</sup> Chesapeake College works with high school students through dual enrollment and the Career & Technology Education (CTE) pathways. College advisors provide regular information sessions and hands-on advising to help students determine their educational opportunities.

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

The proposed Pre-Veterinary Technology Certificate enhances Chesapeake College's ability to support the region's demand for a trained workforce in animal care.

According to the Maryland Department of Labor, the field of Veterinary Technologists and Technicians will grow by 21.7% within the Upper Shore region over the next ten years. The Upper Shore region has a higher than normal location quotient, 1.78, of animal related industries versus the rest of the nation<sup>6</sup>. In comparison, Maryland's overall location quotient is 1.26. This indicates that the Upper Shore region has a demand for workers in animal related fields that exceeds that of the state.

Due to the high concentration of farm and animal related industry on the Eastern Shore of Maryland, there is a higher than average demand for animal care trained workers.

**D. Reasonableness of program duplication:**

Chesapeake College's Pre-Veterinary Technology Certificate is one of only two programs proposed in Maryland. Cecil College has created a similar program; it is in the process of MHEC review.

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<sup>4</sup> Maryland State Plan for Post-secondary Education (2017-2021). Maryland Higher Education Commission.

<sup>5</sup> Maryland State Plan for Post-secondary Education (2017-2021). Maryland Higher Education Commission.

<sup>6</sup> Location quotient is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

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

The Pre-Veterinary Technology Certificate has a positive impact on programs at HBIs, acting as a feeder into those institutions offering similar type degrees.

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

The Pre-Veterinary Technology Certificate has a positive impact on programs at HBIs, acting as a feeder into those institutions offering animal related types of programming.

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

The Pre-Veterinary Technology Certificate is comprised of **34 credit hours**; each of the courses is also a part of Chesapeake College's Biological Science program.

Course Code:	Course Title:	Credit Hours:
AGR 220	Introduction To Animal Science	3
BIO 111	Principles of Biology	4
BIO 113	Principles of Biology II	4
BIO 202	Microbiology	4
BIO 211	Anatomy and Physiology	4
BIO 212	Anatomy and Physiology II	4
CHM 121	General Chemistry	4
ENG 101	Composition	3
MAT Elective	Math Elective (select from MAT 115 or MAT 140)	4

**Course Descriptions:**

**AGR 220 - Introduction to Animal Science**

A comprehensive overview of the application of biology in the care and use of animals that live in close association with humans, including food animals, companion animals, and zoo animals. The role of science in modern food production using animals will be emphasized. Frequent field experiences required. Credits: 4

**BIO 111+ - Principles of Biology I**

Basic principles of biology with special emphasis on cellular and molecular biology. This course for biology majors is one of two courses for students who plan to transfer to programs requiring this course as a foundation for further coursework. Content focuses on providing a framework for understanding how biological components and pathways interact and function by applying principles, techniques, and methods of data analysis to biological problems. The laboratory compliments theory by utilizing the scientific method in experiments to enhance expertise in the use of laboratory equipment. Credits: 4

Prerequisite(s): Complete ENG 094 and MAT 032+ as a prerequisite or appropriate placement score.

### **BIO 113+ - Principles of Biology II**

Basic principles of biology with special emphasis on organismal, ecological, and evolutionary biology. This course for biology majors is one of two courses for students who plan to transfer to programs requiring this course as a foundation for further coursework. Content focuses on organismal biology, evolutionary diversity of living organisms, behavior and ecological interactions that occur among species. The laboratory complements theory by utilizing the scientific method in experiments to enhance expertise in the use of laboratory equipment.

Credits: 4

Prerequisite(s): Complete ENG 094 as a prerequisite or appropriate placement score.

Prereq/Corequisite: MAT 113+, MAT 115+, or MAT 140+ or receive permission from the Science Department.

### **BIO 202 - Microbiology**

An introduction to the study of microorganisms. The course includes the study of morphology, classification, and biochemical characteristics of bacteria, fungi, and viruses. Laboratory exercises include identification, staining, growth and control of microorganisms. Credits: 4

Prerequisite(s): BIO 111+ or BIO 211+ or CHM 121+.

### **BIO 211+ - Anatomy and Physiology I**

An introduction to the structure and function of the human body. This course is the first of two courses involving a systematic study of homeostatic mechanisms of the integumentary, skeletal, muscular, and nervous systems, including special senses. Laboratory study includes cellular biology, histology, and gross anatomy of these systems, with dissection and selected experiments in physiology. Credits: 4

Prerequisite(s): Complete MAT 023 as a prerequisite or appropriate placement score.

Prereq/Corequisite: Complete BIO 111+ as a prerequisite or passage of readiness exam or corequisite or take BIO 103+ as a prerequisite or corequisite.

### **BIO 212+ - Anatomy and Physiology II**

An introduction to the structure and function of the human body. This course is the second of two courses involving a systematic study of the cardiovascular, respiratory, digestive, urinary, and reproductive systems. Homeostasis and endocrine relationships are stressed. Laboratory study includes microscopic and gross anatomy of these systems, with selected experiments in physiology. Credits: 4

Prerequisite(s): MAT 023 or appropriate placement score. BIO 211+

Prereq/Corequisite: ENG 094 or appropriate placement score.

### **CHM 121+ - General Chemistry I**

An introduction to the fundamental principles of chemistry including atomic structure, chemical reactions and stoichiometry. The laboratory consists of basic techniques and study of chemical reactions. [FALL/SPRING] Three hours lecture, three hours laboratory per week. Credits: 4

Prerequisite(s): Complete ENG 094 as a prerequisite or appropriate placement score.

Prereq/Corequisite: MAT 113+ or MAT 115+.

### **ENG 101+ - Composition**

Instruction in the writing process and fundamentals of academic writing. Students will learn to write clearly organized, well-supported, thesis-driven essays. Analysis of written works and other texts, research methods and information literacy, and ethical use of resource materials are studied. Students must write a passing research paper to satisfy course requirements. Credits: 3  
Prerequisite(s): Complete ENG 094 or ENG 100 as a prerequisite or appropriate placement score. Corequisite: ENG 095+ if determined by appropriate placement score.

### **MAT 115+ - Precalculus**

A precalculus algebra and trigonometry course to prepare students majoring in mathematics, engineering, or physical science for courses in calculus and higher-level mathematics. Topics included are polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric functions and their graphs; trigonometric identities and trigonometric equations; appropriate applications of trigonometry; and analytic geometry. Credits: 5  
Prerequisite(s): Complete MAT 032+ as a prerequisite or appropriate placement score.

### **MAT 140+ - Calculus and Analytic Geometry I**

An introduction to calculus. Topics included are functions, graphs, limits, continuity, derivatives, and definite and indefinite integrals and applications of differentiation and calculation of area. Credits: 4

Prerequisite(s): Three units college preparatory mathematics AND MAT 115+ as a prerequisite or an appropriate placement score.

The Pre-Veterinary Technology Certificate will be assessed in accordance with Chesapeake College's program review process as outlined in the Chesapeake College Curriculum Guide.<sup>7</sup>

**Program Goals:** The Pre-Veterinary Technology Certificate will:

- Prepare students to continue their education in a Veterinary Technology or an Animal Science program.
- Provide a broad education in disciplines that form a strong foundation for the biological sciences and challenges students to acquire appropriate competencies in content knowledge and application skills.
- Develop the skills necessary for students to transfer to an entry-level discipline degree program.

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

- Describe and explain foundational concepts in biological science.
- Perform basic laboratory skills necessary to collect, analyze, and interpret scientific data.
- Communicate scientific concepts effectively in oral and written English.

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<sup>7</sup> Chesapeake College. *Chesapeake College Curriculum Development Guide*. 2016.

The Pre-Veterinary Technology Certificate will be fully supported through the college's marketing initiatives; all correlating materials will accurately and concisely represent the program.

**H. Adequacy of articulation**

Chesapeake College is pursuing several articulation agreements with two and four-year institutions.

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

**Program Director:** Nicole Barth has been with Chesapeake College for over 11 years. She holds a Master's degree in Marine, Estuarine, and Environmental Science from the University of Maryland. She is the co-owner and operator of a local farm.

**Elective Course Instructors:** English and math elective courses within the program are led by existing college faculty who are qualified in accordance with Chesapeake College's faculty guidelines.

Course Number:	Course Name:	Faculty Member:	Terminal Degree Title:	Terminal Degree Type & Institution:	Academic Rank:	Number of years w/Chesapeake:
AGR 220	Introduction To Animal Science	Nicole Barth	M.S.	(see above)	Instructor	11
BIO 111	Principles of Biology	Dr. Heather Cunningham	Ph.D.	Biology – University of Alabama	Professor	8
BIO 113	Principles of Biology II	Dr. Heather Cunningham	Ph.D.	Biology – University of Alabama	Professor	8
BIO 202	Microbiology	Ali Barba	M.S.	Biological Oceanography – University of MD	Instructor	3
BIO 211	Anatomy and Physiology	Dr. Kimberly Smoloski	MD	M.D. – St. George's University, School of Medicine. M.S.- Human Anatomy – University of MD	Professor	13
BIO 212	Anatomy and Physiology II	Dr. Kimberly Smoloski	MD	(see above)	Professor	713
CHM 121	General Chemistry	Dr. Elizabeth O'Connor	Ph.D.	Biology – Northern Arizona University Post-Doctoral work – Biotechnology – University of Maryland & Institute for Genomic Research	Professor	11

Chesapeake College faculty regularly participate in professional development to continually improve not only their instructional skills but also the content and relevance of their course(s). Many courses are now available in both face-to-face and online formats, where appropriate, so students have the flexibility in their instructional delivery.

**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 29,000 print titles, more than 500,000 e-books, 1,500 audiovisual material, over 54,000 digital media, 50 print serial subscriptions, and over 55,000 electronic print serials. The library subscribes to over more than 50 databases providing full-text material, bibliographic citations, images, audio, and films.

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

<https://libguides.chesapeake.edu/home>.

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

The classroom(s) used for the Pre-Veterinary Technology Certificate will not require any special technology outside of the typical classroom usage. Chesapeake College utilizes state of the art equipment within all relevant classrooms.

**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**: The tuition and course fees are designed to cover the costs of the program. No additional grants and/or private donations are necessary to assist with program overhead.
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

<b>Resource Categories</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition/Fee Revenue (c + g below)	\$14,250	\$24,225	\$28,091	\$33,693	\$44,650
a. Number of F/T Students	3	5	6	7	9
b. Annual Tuition/Fee Rate	\$3,250	\$3,315	\$3,381	\$3,449	\$3,518
c. Total F/T Revenue (a x b)	\$9,750	\$16,575	\$20,288	\$24,142	\$31,661
d. Number of P/T Students	3	5	5	6	8
e. Credit Hour Rate	\$125	\$128	\$130	\$133	\$135
f. Annualized Credit Hour Rate	\$1,500	\$1,530	\$1,561	\$1,592	\$1,624
g. Total P/T Revenue (d x ex f)	\$4,500	\$7,650	\$7,803	\$9,551	\$12,989
3. Grants, Contracts & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$4,290	\$7,150	\$8,110	\$9,540	\$12,400
<b>TOTAL (Add 1 – 4)</b>	<b>\$18,540</b>	<b>\$31,375</b>	<b>\$36,201</b>	<b>\$43,233</b>	<b>\$57,050</b>

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

Full-time students with Chesapeake College average 26 credits per year while part-time students average 12 credits per year.

<b>TABLE 2: PROGRAM EXPENDITURES:</b>					
<b>Expenditure Categories</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
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& Equip.	\$0	\$0	\$0	\$0	\$0
5. Library	\$0	\$0	\$0	\$0	\$0
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0

<sup>8</sup> 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 can access.

<sup>9</sup> Other Sources: Registration Fee: Defrays cost of clerical support and supplies for registration processing.

<sup>10</sup> Other Sources: Capital Improvement Fee: Supplements county funds for facility improvements and equipment upgrades.

7. Other Expenses					
TOTAL (Add 1 – 7)	\$0	\$0	\$0	\$0	\$0

Chesapeake College’s Pre-Veterinary Technology Certificate will be implemented with existing faculty, administrative staff, marketing and campus resources- no new faculty members or resources will be necessary.

**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 programs. Additionally, all courses are reviewed annually with student opinion surveys. Faculty developed and approved assessment plans are implemented to monitor student mastery of all identified course and program goals and student learning outcomes. Programs also make use of Program Advisory Committees (PAC) with membership consisting of college faculty, administration and local leaders from the community.

**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. In addition, 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.

The college is currently engaged in a multi-year plan to more effectively explore diversity, inclusion, equity, and engagement in curricular programming that highlights intercultural 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.