



June 27, 2019

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

Dear Dr. Fielder,

Capitol Technology University is requesting approval to offer a **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services**. The degree curriculum will be taught using a significant number of existing faculty at our university and will be supported by the development of new courses for the **Ph.D. in Emergency and Protective Services**. The mission of Capitol Technology University is to provide a practical education in engineering, computer science, information technology, and business that prepares individuals for professional careers and affords the opportunity to thrive in a dynamic world. A central focus of the university's mission is to advance practical working knowledge in areas of interest to students and prospective employers within the context of Capitol Tech's degree programs. The university believes that a **Ph.D. in Emergency and Protective Services** is consistent with this mission.

There is a growing requirement within the emergency and protective services industry for experts at the highest level in the field. This program is in response to that need. The **Ph.D. in Emergency and Protective Services** degree is primarily for experienced emergency and protective services personnel who desire to advance in their careers by earning a doctoral degree.

**To respond to needs of the construction safety industry, we respectfully submit for approval a Doctor of Philosophy (Ph.D.) in Emergency and Protective Services. The required proposal is attached as well as the letter from me as university president confirming the adequacy of the university's library to serve the needs of the students in this degree.**

Respectfully,

A handwritten signature in dark ink, appearing to read 'B. L. Sims', written over a printed name.

Bradford L. Sims, PhD



June 27, 2019

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

Dear Dr. Fielder,

This letter is in response to the need for confirmation of the adequacy of the library of Capitol Technology University to support the proposed **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services**. As president of the university, I confirm that the library resources, including support staff, are more than adequate to support the **Ph.D. in Emergency and Protective Services**. In addition, the university is dedicated to, and has budgeted for, continuous improvement of its library resources.

Respectfully,

A handwritten signature in dark ink, appearing to read 'B. L. Sims', written over the printed name.

Bradford L. Sims, PhD



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

|                                 |                               |
|---------------------------------|-------------------------------|
| Institution Submitting Proposal | Capitol Technology University |
|---------------------------------|-------------------------------|

*Each action below requires a separate proposal and cover sheet.*

- |   |   |
|---|---|
| <input checked="" type="radio"/> New Academic Program New | <input type="radio"/> Substantial Change to a Degree Program            |
| <input type="radio"/> Area of Concentration New           | <input type="radio"/> Substantial Change to an Area of Concentration    |
| <input type="radio"/> Degree Level Approval New           | <input type="radio"/> Substantial Change to a Certificate Program       |
| <input type="radio"/> 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 |

|  |  |         |
|--|--|---------|
| Department Proposing Program                 | Department of Doctoral Programs  |         |
| Degree Level and Degree Type                 | Doctor of Philosophy (Ph.D.)   |         |
| Title of Proposed Program                    | Ph.D. in Emergency and Protective Services   |         |
| Total Number of Credits                      | 60   |         |
| Suggested Codes                              | HEGIS: 4999  | CIP: 43 |
| Program Modality                             | <input type="radio"/> On-campus <input checked="" type="radio"/> Distance Education ( <i>fully online</i> ) <input 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: <a href="https://www.captechu.edu/current-students/academic-resources">https://www.captechu.edu/current-students/academic-resources</a> |         |

|                                     |   |
|-------------------------------------|---|
| Preferred Contact for this Proposal | Name: Professor Soren Ashmall   |
|                                     | Title: Director, Assessment & Accreditation                               |
|                                     | Phone: (571) 332-4344   |
|                                     | Email: <a href="mailto:spashmall@captechu.edu">spashmall@captechu.edu</a> |

|   |                              |
|---|------------------------------|
| President/Chief Executive               | Type Name: Dr. Bradford Sims |
|   | Signature:  Date: 6-27-19    |
| Approval/Endorsement by Governing Board | Type Name: Dr. Bradford Sims |
|   | Signature:  Date: 6-27-2019  |

Revised 5/15/18



**PROPOSAL FOR:**

- NEW INSTRUCTIONAL PROGRAM**
- SUBSTANTIAL EXPANSION/MAJOR MODIFICATION**
- COOPERATIVE DEGREE PROGRAM**
- WITHIN EXISTING RESOURCES** or  **REQUIRING NEW RESOURCES**



Institution Submitting Proposal

**Fall 2019**  
Projected Implementation Date

**Doctor of Philosophy  
(Ph.D.)**  
Award to be Offered

4999  
Suggested HEGIS Code

**Doctor of Philosophy in  
Emergency and Protective Services**  
Title of Proposed Program

43.0202  
Suggested CIP Code

**Doctoral Programs**  
Department of Proposed Program

**Dr. Ian McAndrew**  
Dean, Doctoral Programs

**Prof. Soren Ashmall**  
Director, Assessment  
and Accreditation

**spashmall@captechu.edu**  
Contact E-Mail Address

**571-332-4344**  
Contact Phone Number

RJA 6/27-19  
Signature and Date

President/Chief Executive Approval

JUNE 27, 2019  
Date

Date Endorsed/Approved by Governing Board

**Proposed Doctor of Philosophy in Emergency and Protective Services**  
**Department of Doctoral Programs**  
**Capitol Technology University**  
**Laurel, Maryland**

**A. Centrality to Institutional Mission and Planning Priorities:**

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

*Doctor of Philosophy in Emergency and Protective Services:*

The **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services** provides students with the opportunity to conduct extensive and sustained original research at the highest level in the field of Emergency and Protective Services. The **Ph.D. in Emergency and Protective Services** is a unique doctoral program designed to meet the demands of the highest skilled professionals to lead in the advancement of knowledge, and develop innovative solutions to events requiring the services of emergency and protective service first responders. The pressures to identify, plan and implement response requirements, for emergencies where life, property, or the environment is at risk while preventing injuries and death to both emergency responders and the general public is greater now than at any time in the past. The **Ph.D. in Emergency and Protective Services** is for current professionals in the field who desire to elevate their skills and critical decision making to the highest level and contribute to the body of knowledge in Emergency and Protective Services.

The **Ph.D. in Emergency and Protective Services** provides a compass for Emergency and Protective Services personnel to explore new opportunities and obligations in the rapidly changing environment at the local, state, national, and global levels. The rapid infusion of new technology, material, and human interactions in every setting is creating new challenges for Emergency and Protective Service professionals in every environment. The University is in a unique position to provide those students with an avenue to pursue a deep proficiency in these areas using an interdisciplinary methodology, cutting-edge courses, and dynamic faculty skill sets. Graduates will contribute significantly to the Emergency and Protective Services field through the creation of new knowledge and innovative ideas that are currently lacking. The **Ph.D. in Emergency and Protective Services** program is designed as a research doctorate where students will quickly become able to engage in research and publishing without the need to navigate the limitations inherent in traditional coursework models. This degree is for current professionals in the field who desire to elevate their skills to the highest level and contribute to the body of knowledge in the field.

The **Ph.D. in Emergency and Protective Services** program is designed for experienced professionals in the Emergency and Protective Services field with an appropriate master's degree and years of emergency response experience. During the program, students will conduct original research in an approved area of Emergency and Protective Service. Successful completion of the program culminates in the award of the **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services** degree.

There are two options for completion of the **Ph.D. in Emergency and Protective Services** program. Under the thesis option, the student will produce, present, and defend a doctoral dissertation after receiving the required approvals from the student's Committee and the Ph.D. Review Board. Under the publication option, the student will produce, present, and defend their original doctoral research after receiving the required approvals from the student's Committee and the Ph.D. Review Board. The student must also publish three works of original research in a scholarly peer-reviewed journal(s) of high stature. One of the three published works may be in a peer reviewed conference proceeding.

*Relationship to Institutional Approved Mission:*

The **Ph.D. in Emergency and Protective Services** is consistent with the University mission to educate individuals for professional opportunities in engineering, computer science, information technology, and business. The University provides relevant learning experiences that lead to success in the evolving global community. Fundamental to the degrees in the Department of Doctoral Programs are opportunities to pursue cutting-edge knowledge in technological applications, techniques, and procedures. The **Ph.D. in Emergency and Protective Services** is consistent with that philosophy. This same philosophy is supported by the University's existing degree programs and learning opportunities. The University has a Doctor of Science (D.Sc.) in Cybersecurity, Ph.D. in Business Analytics and Decision Science, Ph.D. in Technology, and Ph.D. in Unmanned Systems Applications. The **Ph.D. in Emergency and Protective Services** degree is an integral part of the Strategic Plan for FY 2017-2025 and succeeding years. Funding to support the new degree has been included in the institutional and departmental budgets for FY 2019-2020 and forecasted budgets going forward.

The **Ph.D. in Emergency and Protective Services** degree will be offered online using the Canvas Learning Management System and Zoom. The result is the convenience required by the 21<sup>st</sup> Century learner and provides the interaction with faculty and fellow students that is critical to the high-level learning experience. The curriculum provides the doctoral student the necessary learning tools that the University believes critical to success in Emergency and Protective Services. The degree is also consistent with the interdisciplinary nature of the University.

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

Capitol Technology University operates on four strategic goals:

- 1. Expand Educational Offerings, Increase Program Completion:** *Capitol Technology University is an institution that offers career-relevant curricula with quality learning outcomes. The strategy includes continuing to expand educational offerings, increasing program completion, and raising learner qualifications and outcomes.*
- 2. Increase Enrollment and Institutional Awareness:** *Capitol will accelerate its goal pursuit to become more globally renowned and locally active through student, faculty and staff activities. Enrollment will grow to 650 undergraduates, 350 masters' students and 250 doctoral candidates.*

3. **Improve the Utilization of University Resources and Institutional Effectiveness While Expanding Revenue:** *Capitol will likely continue to be 80% financially dependent on student tuition and fees. We plan to enhance our resources by expanding the range and amount of funding from other streams and aligning costs with strategic initiatives.*
4. **Increase the Number and Scope of Partnerships:** *Capitol's service to our constituents and sources of financial viability both depend upon participation with continuing and new partner corporations, agencies, and schools.*

The **Ph.D. in Emergency and Protective Services** program supports all the University's four strategic goals. The proposed degree builds upon the existing areas of graduate study, including the Master of Business Administration (M.B.A.), Master of Science (M.S.) of Aviation, Master of Science (M.S.) in Aviation Cybersecurity, Master of Science (M.S.) in Critical Infrastructure, Master of Science (M.S.) in Cyber Analytics, Master of Science (M.S.) in Cybersecurity, Master of Science (M.S.) in Computer Science, Master of Science (M.S.) in Information Systems Management, Master of Science (M.S.) in Engineering Technology, Master of Science (M.S.) in Internet Engineering, Technical Master of Business Administration (T.M.B.A.) in Business Analytics and Data Science, and Technical Master of Business Administration (T.M.B.A.) in Cybersecurity, Master of Science (M.S.) in Unmanned and Autonomous Systems Policy and Risk Management, Doctor of Science (D.Sc.) in Cybersecurity, Doctor of Philosophy (Ph.D.) in Aviation, Doctor of Philosophy (Ph.D.) in Business Analytics and Decision Sciences, Doctor of Philosophy (Ph.D.) in Critical Infrastructure, Doctor of Philosophy (Ph.D.) in Manufacturing, Doctor of Philosophy (Ph.D.) in Product Management, Doctor of Philosophy (Ph.D.) in Technology, Doctor of Philosophy (Ph.D.) in Technology/Master of Science (M.S.) Research Methods Combination Program, Doctor of Philosophy (Ph.D.) in Unmanned Systems Applications. The University's graduate degree programs are structured to prepare students to provide leadership and technical expertise to meet the needs of a modern technology and information-dependent organization. The University's programs have been preparing professionals for rapid advances in information and technology, intense global competition, and increasingly complex technological environments for decades. The **Ph.D. in Emergency and Protective Services** will allow students to increase their knowledge of Emergency and Protective Services and contribute to the body of knowledge in the field.

The new **Ph.D. in Emergency and Protective Services** is fully supported by the University's Vision 2025 and Strategic Plan 2017-2025. Funding to support the degree has been included in forecasted budgets going forward.

The University has active partnerships (e.g., Leidos, Patton Electronics, Lockheed Martin, Northrup Grumman, Cyber Security Forum Initiative, IRS, NCS, NSA and DHS) in the private and public arenas. The **Ph.D. in Emergency and Protective Services** degree will provide new opportunities for partnerships as well as expanded research. The increase in partnerships and placement of our graduates in our partner institutions will serve to expand the university's enrollment and reputation. While additional enrollment will increase financial resources, additional partnerships and grants in Emergency and Protective Services will help diversify and increase financial resources.

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

Capitol Technology University has reallocated funds during Year 1 for support of the program and course development, online support, office materials, travel, professional development, and initial marketing. There is no substantial impact on the institution because of the reallocation of these funds. The reallocated funds will be recovered after the first year. The program is expected to be self-sustaining after Year 1.

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

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

The degree is an integral part of the University's Strategic Plan for FY 2017-2025 and forward. Funding to support the ongoing administrative, financial, and technical support of the new degree has been included in institutional and departmental budgets for FY 2019-2020 and forecasted budgets going forward.

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

Capitol Technology University is fully committed to continuing the **Ph.D. in Emergency and Protective Services** degree program for a period of time sufficient to allow enrolled students to complete the program.

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

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

**a. The need for advancement and evolution of knowledge.**

Innovative and critical thinking leaders are needed at the highest levels of Emergency and Protective Services to promote and professionalize the future generation of emergency and protective services first responders. With the ever-increasing demand to respond to intentional and unintentional incidents, as well as natural and manmade disasters, the importance of preparing leaders capable of creating new knowledge through original research, and developing technologies and business practices aimed at saving lives is imperative. The pursuit of new knowledge, technologies, techniques, and practices is paramount to meeting society's new wave of challenges. Among those challenges is the ability to analyze historical events in the context of evaluating new techniques and proper safety procedures for emergency and protective service responders. The ultimate aim being to create safer environments and limiting potential liabilities for all those at risk. Effective leadership in Emergency and Protective Services can only be achieved with a holistic approach and the advanced skills that will be covered in this proposed degree.

Graduates of the **Ph.D. in Emergency and Protective Services** program will have the skills necessary to conduct needed research aimed at solving complex problems, and develop and implement policies based on national need. The University's **Ph.D. in Emergency and**



**Protective Services** program will produce the next generation of top leaders with the knowledge and technological expertise needed now and in the future.

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

Capitol Technology University is a diverse multiethnic and multiracial institution with a long history of serving minority populations. The University has a 51% minority student population with 7% undisclosed. The Black/African American population is 34%. The university has military/veteran population of 22%. The University also has a 22% female population – a significant percentage given its status as a technology institution. If approved, the proposed **Ph.D. in Emergency and Protective Services** will expand the field of opportunities for minorities and disadvantaged students.

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

While Capitol Technology University is not a historically black institution, the University is a diverse multiethnic and multiracial institution with a long history of serving minority populations. The University has a 51% minority student population with 7% undisclosed. The Black/African American population is 34%. The University has military/veteran population of 22%. The university also has a 22% female population – a significant percentage given its status as a technology institution. If approved, the proposed **Ph.D. in Emergency and Protective Services** will expand the field of opportunities for minorities and disadvantaged students.

Given the substantial minority population of Capitol Technology University, it is reasonable to assert that the **Ph.D. in Emergency and Protective Services** program will add to this base of minority participation in the Emergency and Protective Services professions.

**2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.**

The 2017-2021 Maryland State Plan for Postsecondary Education articulates three goals for postsecondary education:

1. Access
2. Success
3. Innovation

**Goal 1: Access**

*“Ensure equitable access to affordable and quality postsecondary education for all Maryland residents.”*

Capitol Technology University is committed to ensuring equitable access to affordable postsecondary education for all Maryland residents. The University meets its commitment in this arena through its diverse campus environment, admissions policies, and academic rigor.

The Capitol Technology University community is committed to creating and maintaining a mutually respectful environment that recognizes and celebrates diversity among all students, faculty, and staff. The University values human differences as an asset and works to sustain a culture that reflects the interests, contributions, and perspectives of members of diverse groups. The University delivers educational programming to meet the needs of diverse audiences. We also seek to instill those values, understanding, and skills to encourage leadership and service in a global multicultural society.

The University's commitment to diversity is reflected in its student body. Capitol Technology University has a 51% minority student population with 7% undisclosed. The Black/African American population is 34%. The University has a military/veteran population of 22%. The University also has a 22% female population – a significant percentage given its status as a technology university.

**Achievement gaps:** The University provides leveling courses in support of individuals attempting a career change to a field of study not necessarily consistent with their current skills. There are situations where additional graduate and/or undergraduate courses best serve student needs in subject areas. The University makes those courses available.

The University engages in diversity training for its institutional population, including students. Diversity and inclusiveness are built in to the curriculum allowing graduates to operate effectively in a global environment. The University supports multiple diversity enhancing actions, including team projects and grants across degrees. This has proven effective at supporting multiple aspects of diversity.

Capitol Technology University does not discriminate on the basis of race, color, national origin, sex, age, sexual orientation, or handicap in admission, employment, programs, or activities.

Through its academic programs, Capitol Technology University seeks to prepare all of its graduates to demonstrate four primary characteristics:

- **Employability:** The ability to enter and advance in technical and managerial careers, appropriate to their level and area of study, immediately upon graduation.
- **Communications:** Mastery of traditional and technological techniques of communicating ideas effectively and persuasively.
- **Preparation of the Mind:** The broad intellectual grounding in technical and general subjects required to embrace future technical and managerial opportunities with success.
- **Professionalism:** Commitment to life-long learning, ethical practice and participation in professions and communities.

The proposed **Ph.D. in Emergency and Protective Services** program and university financial aid will be available to all Maryland residents who qualify academically for admission.

The **Ph.D. in Emergency and Protective Services** program, with its academic rigor, will produce the highest qualified Emergency and Protective Services professionals for this advancing field of study and employment. The University has a proven record of rigorous high-quality education. The University is fully accredited by three accrediting organizations.

In addition to regional accreditation from the Middle States Commission on Higher Education (MSCHE), the University also has specialized accreditation from the International Accreditation Council of Business Education (IACBE) and Accreditation Board for Engineering and Technology (ABET). The **Ph.D. in Emergency and Protective Services** program is consistent with the MSCHE criteria for regional accreditation of the delivery of high-quality higher education.

### **Goal 2: Success**

***“Promote and implement practices and policies that will ensure student success.”***

The courses for the **Ph.D. in Emergency and Protective Services** will be offered online. The online modality provides learning opportunities for students unable or unwilling to attend an on-campus institution of higher education. The University provides a tuition structure that is competitive with its competitors. The University tuition structure does not differentiate between in-state and out-of-state students. Student services are designed to provide advising, tutoring, virtual job fair attendance, and other activities supporting student completion and employment for both on-ground and online students.

Students receive information through admissions regarding the cost to attend the University. The information is also publicly available on the university website. Admissions and financial aid identify potential grants, scholarships, and state plans for each student to reduce potential student debt. The net cost versus gross costs are identified clearly for the student. Students receive advising from financial aid prior to enrolling in classes for the first time. Admissions, Student Services and the Dean of Doctoral Programs advise students of the need for academic readiness as well as the degree requirements. A specific success pathway is developed for each student.

The University’s tuition increases have not exceeded 3%. The University also has a tuition cap, which means full-time tuition is capped not to raise more than 1% per year at the rate applied at time of enrollment for undergraduate students. The tuition remains at this rate if the student remains enrolled full-time without a break in attendance.

The University has in place services and learning tools to guide students to successful degree completion. Programs such as Early Alert provide the University’s faculty and staff opportunities for early student intervention on the pathway to graduation. This applies to all students regardless of the mode of course delivery or degree program. Capitol Technology University is also a transfer friendly institution and participates in multiple programs for government and military credit transfer. Capitol Technology University participates in the Articulation System for Maryland Colleges and Universities (ARTSYS) and has multiple transfer agreements with local institutions at all degree levels.

The University has in place services, tutoring, and other tools to help ensure student graduation and successful job placement. The University hosts a career (job) fair twice a year. The University has an online career center available to all students covering such topics as career exploration, resume writing, job search techniques, social media management, mock interviews, and assistance interpreting job descriptions, offers, and employment packages.

The University also works with its advisory boards, alumni, partners, and faculty to help ensure the degrees offered at the University are compatible with long-term career

opportunities in support of the state's knowledge-based economy.

### **Goal 3: Innovation**

***“Foster innovation in all aspects of Maryland higher education to improve access and student success.”***

Capitol Technology University's past, present, and future is inextricably intertwined with innovation. The University has a long tradition of serving as a platform for the use of new and transformative approaches to delivering higher education. New technology and cutting-edge techniques are blended with proven strategies with the goal of enabling student success in the classroom as well as in a successful career after graduation. As a small institution, Capitol Technology University has the agility to rapidly integrate new technologies into the curriculum to better prepare students for the work environment. The University designs curriculum in alliance with its accreditation and regulating organizations/agencies.

The University also employs online virtual simulations in a game-like environment to teach practical hands-on application of knowledge. For the **Ph.D. in Emergency and Protective Services** this will include simulations and modeling all of the resources involved in the field. The University is engaged with a partner creating high-level virtual reality environments for specific courses in the degree. This use of current technology occurs in parallel with traditional proven learning strategies. These elements of the University online learning environment are purposeful and intended to improve the learning environment for both the student and faculty member. In addition, these elements are intentionally designed to increase engagement, improve outcomes, and improve retention and graduation rates. The University believes that innovation is the key to successful student and faculty engagement.

Example: The University engages its students in 'fusion' projects, which allows students to contribute their skills in interdisciplinary projects such as those in our Astronautical Engineering and Cyber Labs. In those labs, students become designers, builders, and project managers (e.g., to send a CubeSAT on a NASA rocket) and data analysts (e.g., to analyze rainforest data for NASA). We are recruiting partners for this proposed degree for that will provide students potential research and integrative learning opportunities in real projects.

The University also supports the transfer of a limited number of graduate level courses appropriate to the degree. The University has some agreements with articulation partners for the transfer of graduate work (e.g., National Defense University).

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

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

This proposed **Ph.D. in Emergency and Protective Services** is engineered for those individuals who are focused on leading Emergency and Protective Services personnel both strategically and tactically. The professional groups within emergency and protective services include: emergency managers, emergency medical services, fire and rescue services, law enforcement and public works. According to a Homeland Security publication (i.e., Emergency Services Section, November, 2017), this community of professionals comprises an estimated 4.6 million career and volunteer workers.

The International Forum to Advance First Responder Innovation estimates there are over 7.5 million first responders globally.

Graduates with the **Ph.D. in Emergency and Protective Services** can be expected to fill executive and senior-level positions in local, state, and federal government as well as various organizations and associations with a variety of titles such as:

- Executive Fire Officer (E.F.O.)
- Chief Fire Officer (C.F.O.)
- Chief EMS Officer (C.EMS.O.)
- High Threat Director
- Chief Crisis Officer
- Fire Commissioner
- Police Commissioner
- Vice President, Corporate Emergency and Protective Services
- Vice President, First Responder Services
- Vice President, Emergency and Protective Services Training

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

The projected growth in the first responder industry will increase the demand for emergency and protective services professionals. While police have constituted the largest share of first responder employment, employment of emergency medical technicians has been growing approximately four times faster than police.

The Bureau of Labor and Statistics (BLS) reports that the fastest projected growth over the next several years will occur in the sector which includes first responders. While the total U.S. economy is projected to increase by 10.8 percent during the 2012-2022 decade, the sector which includes emergency medical services and support occupations is projected to grow from 21.5 – 28.1 percent.

The BLS predicts that between 2012 – 2022 first responders will see an increase in employment at around 23 percent (Characteristics of Individuals and Employment Among First Responders, August 6, 2015). Possession of a Ph.D. makes an individual significantly more competitive for the high-level positions available in the field. However, there is a shortage of emergency and protective services personnel prepared at the doctoral level to fill the top management jobs. Going forward, as the field of Emergency and Protective Services evolves and becomes more complex, senior management positions will be filled with the most highly educated professionals prepared at the doctorate level. The proposed degree will provide those highly educated and trained experts.

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

The projected need for senior emergency and protective services professionals with advanced degrees is high and will expand as the field expands and becomes more complex. The growth in each subsector continues to be above projections.



### **Firefighter: Wages & Employment Trends**

|  |                                 |
|--|---------------------------------|
| <b>Median wages (2017)</b>                       | \$23.60 hourly, \$49,080 annual |
| <b>Employment (2016)</b>                         | 327,000 employees               |
| <b>Annual Projected Job Openings (2016-2026)</b> | 24,300                          |

### **Police and Sherriff's Officer: Wages and Employment Trends**

|  |                                 |
|--|---------------------------------|
| <b>Median wages (2017)</b>                       | \$29.35 hourly, \$61,050 annual |
| <b>Employment (2016)</b>                         | 684,000 employees               |
| <b>Annual Projected Job Openings (2016-2026)</b> | 49,500                          |

### **Emergency Medical Technicians and Paramedics: Wages & Employment Trends**

|  |                                 |
|--|---------------------------------|
| <b>Median wages (2017)</b>                       | \$16.05 hourly, \$33,380 annual |
| <b>Employment (2016)</b>                         | 248,000 employees               |
| <b>Annual Projected Job Openings (2016-2026)</b> | 19,400                          |

The U.S. Department of Labor has characterized first responders to include firefighters, emergency medical technicians, paramedics, police officers, (and sheriff patrol officers), and other protective service personnel. All three of the major levels of classification (firefighters, EMTs, and police officers) have “fairly high levels of educational attainment.” As a result, the leadership of those subsectors and the field overall will continue to require an advanced degree; at same time, terminal degrees will continue to become more common among the most competitive and accomplished leaders.

#### **5. Data showing the current and projected supply of prospective graduates.**

Due to the paucity of information on the current supply of doctoral prepared emergency and protective services workers, the job-field doctoral qualified three-percent extrapolation method was used. Based on 2017 data compiled by the Department of Homeland Security there were a total of 1,066,300 career, volunteer, and paid-per-call firefighters. There were 980,950 law enforcement officers at the federal, state, local, tribal and territorial law enforcement agencies and 826,000 emergency medical services (technicians and paramedics) professionals. Using the three percent job figure of education-level designations applied to the number of firefighters, law enforcement and emergency medical services workers in 2017 the following number of jobs were projected to potentially require a doctorate degree. Approximately 31,000 firefighter jobs, 29,000 law enforcement and approximately 25,000 emergency medical services positions in the U.S. will require a doctoral degree for advancement to the highest levels in the profession.

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

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

There are no Doctor of Philosophy (Ph.D.) programs, or applied doctorates, specifically in Emergency and Protective Services in the State of Maryland. The University of Maryland (UMD) offers master's and undergraduate degrees in fire protection engineering, but not at the doctoral level. UMD also offers undergraduate, master's, and Ph.D. degrees in the much wider area of criminology and criminal justice (i.e., courts, policing, and corrections). The University of Maryland University Campus (UMUC) offers undergraduate degrees in the wider areas of criminal justice and public safety as well as master's degrees in emergency management and criminal justice management; however, UMUC does not offer a doctoral degree in Emergency and Protective Services. The University of Maryland Eastern Shore offers an undergraduate and master's degree in the broader areas of criminal justice and criminology, but does not offer a doctoral degree in Emergency and Protective Services. Coppin State University offers a master's degree in criminal justice, but does not offer a doctoral degree in Emergency and Protective Services. Bowie State University offers an undergraduate degree in criminal justice, but does not offer a doctoral degree in Emergency and Protective Services. The proposed degree will produce senior leaders who are focused on promoting and ensuring the safety and protection of individuals and communities while managing crisis situations. Capitol Technology University's proposed Ph.D. in Emergency and Protective Services will be the first in the state. Capitol Technology University's proposed degree will be delivered online.

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

The **Ph.D. in Emergency and Protective Services** degree is strongly aligned with the University's strategic priorities and is supported by adequate resources. The proposed **Ph.D. in Emergency and Protective Services** degree will strengthen and expand upon existing technology, management, and applied engineering degree programs at the University. In addition, the Emergency and Protective Services doctoral program will be an option for all students as the field integrates well with the market needs of the University's other technical programs. The degree will present the opportunity for the most advanced study in a rapidly changing and highly complex discipline. Research indicates a significant shortage of senior Emergency and Protective Services professionals prepared at the doctoral level. This program helps fill the gap. There is a thorough discussion of the need in Sections B and C of this document.

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

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

Capital Technology University is not aware of any similar high-demand programs at the Maryland HBIs. The University of Maryland Eastern Shore offers an undergraduate and master's degree in the broader areas of criminal justice and criminology, but does not offer a doctoral degree in Emergency and Protective Services. Coppin State University offers a master's degree in criminal justice, but does not offer a doctoral degree in Emergency and Protective Services. Bowie State University offers an undergraduate degree in criminal justice, but does not offer a

doctoral degree in Emergency and Protective Services. **Capitol Technology University's proposed degree is a Doctor of Philosophy (Ph.D.) in the specifically-defined area of Emergency and Protective Services.**

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

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

Capital Technology University is not aware of any similar high-demand programs at the Maryland HBIs. The University of Maryland Eastern Shore offers an undergraduate and master's degree in the broader areas of criminal justice and criminology, but does not offer a doctoral degree in Emergency and Protective Services. Coppin State University offers a master's degree in criminal justice, but does not offer a doctoral degree in Emergency and Protective Services. Bowie State University offers an undergraduate degree in criminal justice, but does not offer a doctoral degree in Emergency and Protective Services. **Capitol Technology University's proposed degree is a Doctor of Philosophy (Ph.D.) in the specifically-defined area of Emergency and Protective Services.**

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

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

The University's New Programs Group established the proposed program through a rigorous review of unmet needs. The group includes selected representation from the University's faculty, administrators, and Executive Council. The program will be overseen by a diverse faculty with backgrounds in Emergency and Protective Services, Law Enforcement, Emergency Management, and Emergency Medical Service. Please see Section I for a detailed list of the faculty's backgrounds and qualifications.

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

*Educational Objectives:*

- Students will integrate and synthesize alternate, divergent, or contradictory perspectives or ideas fully within the field of Emergency and Protective Services.
- Students will present scholarly work on Emergency and Protective Services via appropriate communication channels.
- Students will demonstrate advanced knowledge and competencies in Emergency and Protective Services.
- Students will analyze existing theories to draw data-supported conclusions in Emergency and Protective Services.
- Students will execute a plan to complete a significant piece of scholarly activity in Emergency and Protective Services.

- f. Students will evaluate the legal, social, economic, environmental, and ethical impact of actions within Emergency and Protective Services and demonstrate advanced knowledge and competency to integrate the results in the leadership decision-making process.

*Learning Outcomes:*

Upon graduation:

- a. Graduates will evaluate the legal, social, economic, environmental, and ethical impact of actions within Emergency and Protective Services and demonstrate advanced knowledge and competency to integrate the results in the leadership decision-making process.
- b. Graduates will demonstrate the highest mastery of traditional and technological techniques of communicating ideas effectively and persuasively.
- c. Graduates will evaluate complex problems, synthesize divergent/alternative/contradictory perspectives and ideas fully, and develop advanced solutions to Emergency and Protective Services challenges.
- d. Graduates will contribute to the body of knowledge in the study of Emergency and Protective Services.

**3. Explain how the institution will:**

**a) Provide for assessment of student achievement of learning outcomes in the program.**

Capitol Technology University will assess student achievement of the learning outcomes per the regulations specified by the university's regional accreditation organization: the Middle States Commission on Higher Education (MSCHE). The University will also evaluate student achievement of the learning outcomes using the specialized standards set by the Commission on Fire Accreditation International (CFAI) and the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA).

Under MSCHE, the university will use Standard V, Educational Effectiveness Assessment, of the Standards for Accreditation and Requirements of Affiliation. Standard V requires:

Assessment of student learning and achievement demonstrates that the institution's students have accomplished educational goals with their program of study, degree level, the institution's mission, and appropriate expectations for institutions of higher education.

(Source: <https://www.msche.org/?Nav1=About&Nav2=FAQ&Nav3=Question07>)

Per the MSCHE's accreditation requirements, Capitol Technology University will measure Standard V by using the following criteria:

An accredited institution possesses and demonstrates the following attributes or activities:

1. Clearly stated educational goals at the institution and degree/program levels, which are interrelated with one another, with relevant educational experiences, and with the institution's mission;

2. Organized and systematic assessments, conducted by faculty and/or appropriate professionals, evaluating the extent of student achievement of institutional and degree/program goals.

Institutions should:

- a. defines meaningful curricular goals with defensible standards for evaluating whether students are achieving those goals;
- b. articulate how they prepare students in a manner consistent with their mission for successful careers, meaningful lives, and, where appropriate, further education. They should collect and provide data on the extent to which they are meeting these goals;
- c. support and sustain assessment of student achievement and communicate the results of this assessment to stakeholders;

3. Consideration and use of assessment results for the improvement of educational effectiveness. Consistent with the institution's mission, such uses include some combination of the following:

- a. assisting students in improving their learning;
- b. improving pedagogy and curriculum;
- c. reviewing and revising academic programs and support services;
- d. planning, conducting, and supporting a range of professional development activities;
- e. planning and budgeting for the provision of academic programs and services;
- f. informing appropriate constituents about the institution and its programs;
- g. improving key indicators of student success, such as retention, graduation, transfer, and placement rates;
- h. implementing other processes and procedures designed to improve educational programs and services;

4. If applicable, adequate and appropriate institutional review and approval of assessment services designed, delivered, or assessed by third-party providers; and

5. Periodic assessment of the effectiveness of assessment processes utilized by the institution for the improvement of educational effectiveness.

(Source: <https://www.msche.org/publications/RevisedStandardsFINAL.pdf>)

The Center for Public Safety Excellence (CPSE) is an international technical organization that works with the most progressive fire and emergency service agencies and most active fire professionals. The CPSE mission is “to lead the fire and emergency service to excellence through the continuous quality improvement process of accreditation, credentialing, and education.” CPSE’s accreditation body is the Commission on Fire Accreditation International (CFAI).

The University will use CFAI Category 8 and the associated standards in its assessments.



## Commission on Fire Accreditation International (CFAI) Accreditation Model Overview

|                                  |   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
|----------------------------------|---|----------------------------------|-----------------------|----------------------------|--------------------|-------------------------|------------------------------------|-------------------------|--|--------------------|-----------------------------------|-------|--|
| <b>THE ACCREDITATION MODEL</b>   | Accredited agencies are often described as being community-focused, data-driven, outcome-focused, strategic-minded, well organized, properly equipped, and properly staffed and trained.  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
|                                  | Part of the reason for this is the holistic scope of the CFAI model. It includes ten categories that cover the span of fire and emergency service operations:   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
|                                  | <table><tr><td>1. Governance and Administration</td><td>6. Physical Resources</td></tr><tr><td>2. Assessment and Planning</td><td>7. Human Resources</td></tr><tr><td>3. Goals and Objectives</td><td>8. Training and Competency</td></tr><tr><td>4. Financial Resources</td><td>9. Essential Resources</td></tr><tr><td>5. Programs</td><td>10. External Systems Relationship</td></tr></table>                                  | 1. Governance and Administration | 6. Physical Resources | 2. Assessment and Planning | 7. Human Resources | 3. Goals and Objectives | 8. Training and Competency         | 4. Financial Resources  | 9. Essential Resources                         | 5. Programs        | 10. External Systems Relationship |       |  |
| 1. Governance and Administration | 6. Physical Resources   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| 2. Assessment and Planning       | 7. Human Resources  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| 3. Goals and Objectives          | 8. Training and Competency  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| 4. Financial Resources           | 9. Essential Resources  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| 5. Programs                      | 10. External Systems Relationship   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
|                                  | Category 5 (Programs) covers the whole gamut:   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
|                                  | <table><tr><td>o Community Risk Reduction</td><td>o Technical Rescue</td></tr><tr><td>o Public Education</td><td>o Hazmat</td></tr><tr><td>o Fire Investigations</td><td>o Aviation Rescue and Firefighting</td></tr><tr><td>o Domestic Preparedness</td><td>o Marine and Shipboard Rescue and Firefighting</td></tr><tr><td>o Fire Suppression</td><td>o Wildland Firefighting</td></tr><tr><td>o EMS</td><td></td></tr></table> | o Community Risk Reduction       | o Technical Rescue    | o Public Education         | o Hazmat           | o Fire Investigations   | o Aviation Rescue and Firefighting | o Domestic Preparedness | o Marine and Shipboard Rescue and Firefighting | o Fire Suppression | o Wildland Firefighting           | o EMS |  |
| o Community Risk Reduction       | o Technical Rescue  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| o Public Education               | o Hazmat  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| o Fire Investigations            | o Aviation Rescue and Firefighting  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| o Domestic Preparedness          | o Marine and Shipboard Rescue and Firefighting  |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| o Fire Suppression               | o Wildland Firefighting   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |
| o EMS                            |   |                                  |                       |                            |                    |                         |                                    |                         |  |                    |                                   |       |  |

The Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA) is considered the gold standard for public safety. Governmental organizations, accredited colleges and universities are the only institutions eligible to participate in the Public Safety Training Academy Accreditation Program. The program standards cover nine topic areas. The University will use Topic Area 9 in its assessments.

## Commission on Accreditation for Law Enforcement Agencies (CALEA) PSTA Standards

|  |
|--|
| <b>Public Safety Training Academy</b> [ edit ]   |
| The Public Safety Training Academy Accreditation Program began in 2002. Its purpose is to promote superior public safety training services and recognize professional excellence. The program's standards are derived from the best practices of professional public safety training academies, and do not conflict with any organizations that are recognized training authorities. The standards prescribe "what" academies should be doing, but not "how" they should do it. That decision is left up to each academy and the Chief Executive Officer.  |
| The program standards cover nine topic areas: (1) credentialing; (2) organization; (3) direction and authority; (4) human resources; (5) recruitment, selection, employment, and promotion; (6) instructional systems; (7) training administration; (8) instructors; and (9) students.   |
| The CALEA Accreditation Process is a proven modern management model; once implemented, it presents the CEO, on a continuing basis, with a blueprint that promotes the efficient use of resources and improves service delivery—regardless of the size, type, or geographic location of the academy.  |
| The standards upon which the Public Safety Training Academy Accreditation Program is based reflect the current thinking and experience of training academy practitioners and accreditation experts. CALEA's Standards for Public Safety Training Academies® and its Accreditation Program are seen as benchmarks for today's public safety training programs.  |
| <ul style="list-style-type: none"><li>• CALEA Accreditation requires an academy to develop a comprehensive, well thought out, uniform set of written directives. This is one of the most successful methods for reaching administrative and operational goals, while also providing direction to personnel.</li><li>• CALEA Accreditation standards provide the necessary reports and analyses a CEO needs to make fact-based, informed management and administrative decisions.</li><li>• CALEA Accreditation is a means for developing or improving upon an academy's relationship with the community it serves.</li><li>• CALEA Accreditation strengthens an academy's accountability through a continuum of standards that clearly define authority, performance, and responsibilities.</li><li>• Being CALEA Accredited can limit an academy's liability and risk exposure because it demonstrates that recognized standards for public safety training academies have been met, as verified by a team of independent outside CALEA-trained assessors.</li><li>• CALEA Accreditation facilitates an academy's pursuit of professional excellence.</li></ul> |

### b) Document student achievement of learning outcomes in the program

The University will document student achievement of the learning outcomes in the **Ph.D. in Emergency and Protective Services** program and provide reporting to its accreditation bodies as

stipulated by its accreditation. The University will also publicly post the results of the assessment on its website.

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

*Program description, as it will appear in the catalog:*

The **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services** provides students with the opportunity to conduct extensive and sustained original research at the highest level in the field of Emergency and Protective Services. The **Ph.D. in Emergency and Protective Services** is a unique doctoral program designed to meet the demands of the highest skilled professionals to lead in the advancement of knowledge, and develop innovative solutions to events requiring the services of emergency and protective service first responders. The pressures to identify, plan and implement response requirements, for emergencies where life, property, or the environment is at risk while preventing injuries and death to both emergency responders and the general public is greater now than at any time in the past. The **Ph.D. in Emergency and Protective Services** is for current professionals in the field who desire to elevate their skills and critical decision making to the highest level and contribute to the body of knowledge in Emergency and Protective Services.

The **Ph.D. in Emergency and Protective Services** provides a compass for Emergency and Protective Services personnel to explore new opportunities and obligations in the rapidly changing environment at the local, state, national, and global levels. The rapid infusion of new technology, material, and human interactions in every setting is creating new challenges for Emergency and Protective Service professionals in every environment. The University is in a unique position to provide those students with an avenue to pursue a deep proficiency in these areas using an interdisciplinary methodology, cutting-edge courses, and dynamic faculty skill sets. Graduates will contribute significantly to the Emergency and Protective Services field through the creation of new knowledge and innovative ideas that are currently lacking. The **Ph.D. in Emergency and Protective Services** program is designed as a research doctorate where students will quickly become able to engage in research and publishing without the need to navigate the limitations inherent in traditional coursework models. This degree is for current professionals in the field who desire to elevate their skills to the highest level and contribute to the body of knowledge in the field.

*Description of program requirements:*

#### Entrance Requirements

To be accepted into the **Ph.D. in Emergency and Protective Services** program, students must have completed an appropriate master's degree with a cumulative GPA of no less than 3.0 on a 4.0 scale. Students must also possess a high level of experience in the field, or a closely related field, and show the academic promise of their future ability to produce original research of publishable quality (suitable for a scholarly peer-reviewed journal or publication and presentation of high stature).

Students must also provide a prospectus of at least 750 words that details their existing expertise and preparation for success in conducting original research within Capitol Technology

University's **Ph.D. in Emergency and Protective Services** program. International students are required to take the TOEFL and score at least 550 on the paper-based test or 79 on the internet-based test.

*Degree Requirements:*

The **Ph.D. in Emergency and Protective Services** program is designed for students with an appropriate master's degree and significant years of field experience. During the program, students will conduct original research in an approved area of study. Successful completion of the program culminates in the award of the **Doctor of Philosophy (Ph.D.) in Emergency and Protective Services** degree.

There are two options for completion of the **Ph.D. in Emergency and Protective Services** program. Under the thesis option, the student will produce, present, and defend a doctoral dissertation after receiving the required approvals from the student's Committee and the Ph.D. Review Board. Under the publication option, the student will produce, present, and defend their original doctoral research after receiving the required approvals from the student's Committee and the Ph.D. Review Board. The student must also publish three works of original research in a scholarly peer-reviewed journal(s). One of the three published works may be in a peer reviewed conference proceeding.

*Degree Requirements:*

The following is a list of courses for the **Ph.D. in Emergency and Protective Services** degree. Students expecting to complete this degree must meet all prerequisites for the courses listed below.

**Doctor of Philosophy in Emergency and Protective Services**

**Courses**

**Total Credits: 60**

***EMERGENCY AND PROTECTIVE SERVICES  
DOCTORAL CORE: 30 CREDITS***

**EPS-800 Emergency and Protective Services (6 credits)**

The student will focus on the studying the latest Emergency and Protective Services implications of the rapid infusion of new technology in the workplace. The student will synthesize the growing effect of technology on responder safety, response strategy, tactics, responder long term physical and mental health, and potential employer liabilities. The student will start identifying areas for extensive research and exploration. Prerequisite: None.

**EPS-810 Impending Environments in Emergency and Protective Services (6 credits)**

The student will use a vetting process during research of new political, social, economic, and technological innovations that may have an impact on emergency and protective services. The student will build upon EPS-800 by refining and further developing their research topic. Prerequisite: EPS-800.

**EPS-820 Advanced Research Methods for Emergency and Protective Services (6 credits)**

The Chair will guide the doctoral student through advanced research methods for Emergency and Protective Services. The student will incorporate these skills in their plan for doctoral research. Prerequisite: EPS-810.

**EPS-830 Comprehensive Strategies for Emergency and Protective Services (6 credits)**

The student will thoroughly analyze comprehensive strategies for the Emergency and Protective Services field. The student will synthesize the full range of strengths, weaknesses, and gaps in the existing comprehensive strategies in the work environment. The student will incorporate the findings in to their research plan. Prerequisite: EPS-820.

**EPS-850 Emergency and Protective Services Proposal (6 credits)**

The student will produce a proposal for research that is comprehensive in detail and planning. The proposal will address the research topic, scope and aims, objectives, milestones, and a timing plan. After the doctoral student's Chair approves the proposal, the student will then begin work according to the proposal and research plan. Prerequisite: EPS-830.

***EMERGENCY AND PROTECTIVE SERVICES  
DOCTORAL RESEARCH AND WRITING: 30 CREDITS***

**EPS-900 Emergency and Protective Services Writing I (6 credits)**

The student will compose and complete Chapters 1 and 2 within the boundaries of the proposal and research plan. Chapters 1-2 will be reviewed by the student's Chair and Committee and must be approved for the student to advance. Prerequisite: EPS-850.

**EPS-910 Emergency and Protective Services Writing II (6 credits)**

The student will compose and complete Chapter 3 within the according to the approved proposal. The student will also submit Chapters 1-3 to the Institutional Review Board (IRB) and Academic Review Board (ARB). After receiving the necessary approvals, the student will conduct data collection and analysis activities consistent with the research plan. Prerequisite: EPS-900.

**EPS-920 Emergency and Protective Services Writing III (6 credits)**

The student will compose and complete Chapter 4. The student will provide a complete and substantive presentation of the research results in Chapter 4. The student's Chair and Committee must review and approve Chapter 4 for the student to advance. Prerequisite: EPS-910.

**EPS-930 Emergency and Protective Services Writing IV (6 credits)**

The student will compose and complete Chapter 5 and submit the work to the student's Chair and Committee. The student will also finalize all required elements of their research. The student's Chair and Committee must review and approve the complete document. The student's Chair and Committee will then submit the complete document to the University Reviewers and Ph.D. Review Board for approval. The student must receive approval from the University Reviewers and Ph.D. Review Board to advance forward. Prerequisite: EPS-920.

**EPS-940 Emergency and protective Services Doctoral Defense (6 credits)**

Upon approval from the University Reviewers and Ph.D. Review Board, the student will prepare and deliver an oral presentation summarizing the body of research and defend the same through viva voce (i.e., oral examination). The student's Chair, Committee, and Ph.D. Review Board will confer to determine if the student has provided a sufficient and necessary final oral defense of the

research. Prerequisite: EPS-930.

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

N/A. This is a graduate program.

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

The program will be accredited regionally by the Middle States Commission on Higher Education (MSCHE). The program will also be accredited by the Commission on Fire Accreditation International (CFAI) and the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA). Capitol Technology University is currently accredited by MSCHE, ABET and IACBE, NSA, and DHS.

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

The University will not be contracting with another institution or non-collegiate organization.

**6. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The **Ph.D. in Emergency and Protective Services** program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, Learning Management System, availability of academic support services and financial aid resources, and costs and payment policies.

Curriculum, course and degree information will be available on the university website and via e-mail as well as regular mail (by request). The expectations on faculty/student interaction are available to students during virtual open house events, literature, website, etc. In addition, this information is part of the material distributed for each course. Students receive guidance on proper behavior/interaction with their Chair and Ph.D. Committee members as well as the online environment to facilitate a high-level doctoral learning experience. Technology competence and skills and technical equipment requirements are part of the material distributed for each course. The technical equipment requirements are also listed on our website and provided to students in the welcome package.

The University's academic support services, financial aid resources, costs and payment policies, and Learning Management System are covered in the University Open Houses, application process, Welcome Aboard process, Orientation, online Student Town Halls, and individual counseling.



- 7. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The University will provide students with clear, complete, and timely information on the program's curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, Learning Management System, availability of academic support services and financial aid resources, and costs and payment policies.

Curriculum, course and degree information will be available on the University website and via e-mail as well as regular mail (by request). The expectations on faculty/student interaction are available to students during virtual open house events, literature, website, etc. In addition, this information is part of the material distributed for each course. Students receive guidance on proper behavior/interaction in the online environment to facilitate a high-level learning experience. The required technology competence and skills, plus the technical equipment requirements, are part of the material distributed for each course. The technical equipment requirements are also listed on the University's website and provided to students in the welcome package.

The University's academic support services, financial aid resources, costs and payment policies, and Learning Management System are covered in the University Open houses, application process, Welcome Aboard process, Orientation, online Student Town Halls, and individual counseling.

#### **H. Adequacy of Articulation:**

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

This program does not currently have articulation partners. However, the articulation process will work as it does for the University's current degrees. The University is very active with its transfer partners throughout the state and beyond. The goal of the University is to work with partners to make transfer as seamless as possible and to maximize the student's transfer credits as allowable. There are transfer admissions personnel to guide the student through the process.

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

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

Almost all of the faculty listed below have been engaged with the University for at least several years. Dr. Abu-Ageel, Dr. Bajracharya, Dr. Bajwa, Dr. Baker, Dr. Butler, Dr. Hosseini, Dr. Martin, Dr. McAndrew, and Dr. Wakeham are fulltime faculty members. All of the faculty

members hold terminal degrees. The University leadership is confident in the quality of the faculty and their abilities to provide a learning environment supportive of the University goals for student success. Additional Ph.D.-qualified faculty will be added as needed.

Instructors who will be engaged with the **Ph.D. in Fire and Emergency Services** are:

| INSTRUCTOR                           | BACKGROUND   | COURSES ALIGNED TO BE TAUGHT |
|--------------------------------------|--|------------------------------|
| Dr. Ronald Wakeham<br>Full time      | Executive Fire Officer (E.F.O.)<br>Chief Fire Officer (C.F.O.)<br>Chief EMS Officer (C.EMS.O.)<br>D.P.A. Public Administration<br>M.P.A. Public Administration<br>B.S. Governmental Administration | All EPS 800 and 900 courses  |
| Dr. Barbara Russo<br>Adjunct         | Ph.D. Fire & Emergency Services<br>M.S. Fire & Emergency Management<br>B.S. Sociology/Criminal Justice   | All EPS 800 and 900 courses  |
| Dr. Nayef Abu-Ageel<br>Full time     | Ph.D. Electrical and Computer Engineering<br>M.S. Electrical Engineering<br>B.S. Electrical Engineering  | All EPS 900 courses          |
| Dr. Tariq Abughazaleh<br>Adjunct     | Ph.D. Technology<br>M.Sc. Quality Engineering<br>B.S. Mechanical Engineering   | All EPS 900 courses          |
| Dr. Chandra Bajracharya<br>Full time | Ph.D. Electrical and Computer Engineering<br>M.S. Applied Computing<br>M.S. Electrical Power Engineering<br>B.E. Electrical Engineering  | All EPS 900 courses          |
| Dr. Garima Bajwa<br>Full time        | Ph.D. Computer Science and Engineering<br>M.S. Electrical and Computer Engineering<br>B.S. Electronics and Communication Engineering   | All EPS 900 courses          |
| Dr. Richard Baker<br>Full time       | Ph.D. Information Systems<br>M.S. Mathematics and Computer Science<br>B.S. Mathematics   | All EPS 900 courses          |
| Dr. Hasna Banu<br>Adjunct            | Ph.D. Theoretical Physics<br>M.S. Mathematics<br>B.S. Mathematics  | All EPS 900 courses          |
| Dr. Simon Barrens<br>Adjunct         | Ph.D. Engineering<br>M.S. Engineering Physics<br>B.S. Physics and Nuclear Engineering  | All EPS 900 courses          |
| Dr. Malcolm Beckett<br>Adjunct       | D.B.A. Quality Systems Management in<br>Homeland Security and Defense<br>M.S. Information Systems Management   | All EPS 900 courses          |

|  | PMP   |                     |
|--|---|---------------------|
| Dr. William Butler<br>Full-time        | D.Sc. Cyber Security<br>M.S. Strategic Studies<br>B.S. Computer Science<br>NSTISSI No. 4011<br>CNSSI No. 4012<br>NSTISSI No. 4015<br>CNSSI No. 4016   | All EPS 900 courses |
| Dr. Soheil Sadat Hosseini<br>Full time | Ph.D. Engineering, Electrical Engineering &<br>Computer Science<br>M.Sc. Electrical Engineering<br>B.S. Electrical Engineering  | All EPS 900 courses |
| Dr. Priscilla Lewis<br>Adjunct         | D.M. Leadership<br>M.B.A<br>M.P.S Managerial Policy<br>B.S. Economics and Mathematics   | All EPS 900 courses |
| Dr. Linda Martin<br>Full time          | Ph.D. Safety Sciences<br>M.S. Occupational Safety and Health<br>Management<br>M.B.A.<br>B.S. Geology<br>Certified Industrial Hygienist: CP-10409<br>Certified Safety Professional: CSP-21861<br>Associate Safety Professional: ASP-A15411<br>Safety Management Specialist: SMS-2<br>Occupational Health and Safety Technologist:<br>OHST-4264<br>Construction Health and Safety Technician:<br>CHST-C3978<br>Safety Trained Supervisor – Construction:<br>IEX11851<br>Certified Environmental Safety & Health<br>Trainer: CET-13003<br>Certified Hazardous Materials Manager:<br>CHMM-17198<br>Construction Risk and Insurance Specialist<br>(CRIS)<br>Authorized OSHA Outreach Trainer: General<br>Industry<br>Authorized OSHA Outreach Trainer:<br>Construction<br>Red Cross First Aid/CPR/AED Instructor<br>Volunteer Service<br>President, Board of Directors: Board of Certified<br>Safety Professionals, 2018-2019<br>President, Board of Trustees: BCSP Foundation,<br>2018-2019<br>Vice President, Board of Directors: Board of<br>Certified Safety Professionals, 2017 | All EPS 900 courses |

|                                |  |                     |
|--------------------------------|--|---------------------|
|                                | Director-at-Large, Board of Directors: Board of Certified Safety Professionals, 2014-2016<br>Ambassador, Board of Certified Safety Professionals, 2017 – Present   |                     |
| Dr. Ian McAndrew<br>Full time  | Ph.D. Mechanical Engineering<br>M.Sc. Manufacturing Engineering<br>M.A. Education Management<br>Post-Graduate Diploma in Education<br>B.Sc. (Hons) Mechanical Engineering<br>B.A. Production Engineering<br>Technical Qualifications (Associate Degrees)<br>Higher National Certificate, HNC, in Mechanical Engineering<br>Higher National Diploma, HND, in Production Engineering<br>System Safety in Occupational Hygiene and Safety – HAS Courses<br>City and Guilds 200, 205 II & III (all distinctions – highest grade ever achieved in Ford’s Training Scheme)<br>Apprentice Toolmaker 1977 – 1981 (Distinction) | All EPS 900 courses |
| Dr. Alexander Perry<br>Adjunct | D.Sc. Cyber Security<br>M.S. Applied and Computational Mathematics<br>B.S. Applied Mathematics   | All EPS 900 courses |

Additional Qualifications:

Dr. Wakeham is a recognized expert in the emergency and protective services fields. He is a certified Executive Fire Officer, Chief Fire Officer, and Chief EMS Officer. Dr. Wakeham was previously the Department Chair of Security and Emergency Services, at Embry-Riddle Aeronautical University (ERAU) from 2011-2019. He initiated and developed ERAU’s undergraduate degree program which has been recognized by the U.S. Fire Administration’s Fire and Emergency Services Higher Education (FESHE) program for its standards of excellence. Dr. Wakeham also spearheaded the application process for International Fire Service Accreditation Congress (IFSAC) accreditation, resulting in the program’s accreditation in 2016.

As a professor, Dr. Wakeham has taught classes in Fire, Emergency Services, Government, Values/Ethics, Homeland Security, Cyber Security, and Human Reliance. He is a seasoned academic with years of experience recruiting students and new faculty. He has also served as a faculty hiring authority, evaluator, and promotion examiner.

Dr. Wakeham was a course developer and contract faculty member (1996 – 2016) for ERAU’s Department of Homeland Security. He was an instructor in the Executive Fire Officer Program and Management Sciences Program. His curricula vitae includes classes in Executive Leadership, Executive Development, Strategic Management of Change, Organizational Theory in Practice, and Influencing. Dr. Wakeham also serves as the Haz-Mat consultant and instructor for The Seminole Tribe of Florida’s Emergency Services Department.

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

**a) Pedagogy that meets the needs of the students**

The primary pedagogy for faculty at Capitol Technology University is the Active Learning model. The University believes strongly in a highly-interactive, thinking, and hands-on experience for students in each class to the maximum extent possible.

It was two Missouri State professors, historian Charles Bonwell and psychologist James Eison, who coined the term “active learning.” In their 1991 book on the subject, *Active Learning: Creating Excitement in the Classroom*, they offered this definition of the concept: “active learning involves students in doing things and thinking about the things they are doing.”

The definition, though it seems circuitous, marks a definitive pedagogical shift in college teaching and learning. Rather than think about what they are watching, hearing, or reading, students are first encouraged to be “doing” something in class, and then to apply critical thought and reflection to their own classroom work and activity. Their argument was backed up by research. Even Bligh, 20 years earlier, had pointed out that the immediate rehearsal of new information and knowledge had a significant impact upon learning.

This approach is as helpful in the sciences as it is in the arts or humanities: whether it’s organic chemistry, creative writing, or behavioral economics, concepts are all best understood through repeated practice and open, social exploration. The central tenet of active learning is that practice matters, and that classroom time is better spent giving students opportunities to work with concepts over and over, in a variety of ways and with opportunities.

The central tenet of active learning — that practice and interaction matters— can be applied across disciplines for immediate feedback, so that knowledge can take hold in their own minds.

(Source: Preville, P. *Active Learning: The Perfect Pedagogy for the Digital Classroom: An Essential Guide for the Modern Professor*)

All faculty receive regular periodic and recurring pedagogical training during the academic year. Those training sessions occur in a hybrid format – simultaneously live online and live on-ground in the classroom. The sessions are designed to reach all faculty, both fulltime and adjunct, in order to ensure everyone receives the training. Additionally, the sessions are recorded for those faculty who are unable to attend the live training session due to other professional and teaching commitments.

**b) The Learning Management System**

The Department of Online Learning (formerly the University’s Department of Distance Learning) and the instructional technology division support the online program needs of faculty and students. The University’s Department of Online Learning and the IT Help Desk provide 24-hour

support to the faculty. The Canvas portion of the program is the online Learning Management System. When a new faculty member is assigned to teach an online course, the Department of Online Learning provides formal training for the instructor. New faculty are assigned an experienced faculty mentor to ensure a smooth transition to the online environment as well as to ensure compliance with the institution's online teaching pedagogy. The University believes this provides the highest-level learning experience for the faculty member and, in turn, students attending online classes.

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

Faculty at Capitol Technology University receive training in Keller's ARCS Motivational Model and his associated strategies for distance education/online learning.

A model used in online delivery of teaching and learning to increase learner motivation is the Keller's ARCS motivational model. This model has been considered an important element in online education because of its implications on increased learner motivation and learning outcomes. The Keller's model consists of motivating students by maintaining and eliciting attention (A), such as virtual clinical simulations; making the content and format relevant (R), by modeling enthusiasm or relating content to future use; facilitating student confidence (C), by providing "just the right challenge"; and promoting learner satisfaction (S), by providing reinforcement and praise when appropriate. Examples of the Keller's model include increasing motivation including the arousal of curiosity of students, making the connection between learning objectives and future learning goals, autonomous thinking and learning, and fostering student satisfaction. Keller's ARCS model has been researched by various educational online programs to analyze student motivation and learning outcomes. The Keller's model serves as an example and guide for instructors to motivate and increase online engagement with their students as well as research purposes.

A qualitative study by Chan Lin investigated online student learning and motivation. Discussion boards, student projects, and reflection data were collected and analyzed from a 12-week web-based course. Respondents indicated the importance of online feedback from the instructor and peer modeling of course tasks to visualize learning progress. The study revealed using Keller's ARCS strategies fosters greater student online engagement by fostering self-efficacy and a sense of accomplishment.

In a mixed method study, assessing the use of Keller's ARCS on instructional design, the use of educational scaffolding fostered positive levels of student motivation. Relevancy, attention, confidence, and satisfaction were all common factors associated with student success in the course and course completion.

(Source: Pinchevsky-Font T, Dunbar S. Best Practices for Online Teaching and Learning in Health Care Related Programs. The Internet Journal of Allied Health Sciences and Practice. January 2015. Volume 13 Number 1.)

All faculty receive regular periodic and recurring training on evidence-based practices for distance education/online learning during the academic year. Those training sessions occur in multiple formats: asynchronous, synchronous (i.e., live online), hybrid (i.e., simultaneously live online and live on-ground), and on-ground in the classroom. The sessions are designed to reach

all faculty, both fulltime and adjunct, to ensure all members receive the training. Additionally, the live sessions are recorded for those faculty who are unable to attend the live training session due to other professional commitments or who are teaching classes at the training delivery time.

**J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12):**

- 1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program. If the program is to be implemented within existing institutional resources, include a supportive statement by the President for library resources to meet the program's needs.**

*Library Services:* The Puente Library offers extensive services and a wide collection for Capitol Technology University students to be academically successful. Library resources are available digitally. The library also provides a mailing service for materials borrowed through the Maryland system. The library is currently supporting the following degrees at the undergraduate level: B.S. in Astronautical Engineering, B.S. in Business Analytics and Data Sciences, B.S. in Computer Engineering, B.S. in Computer Engineering Technology, B.S. in Computer Science, B.S. in Construction Management and Critical Infrastructure, B.S. in Cyber Analytics, B.S. in Cybersecurity, B.S. in Electrical Engineering, B.S. in Electrical Engineering Technology, B.S. in Engineering Technology, B.S. in Management of Cyber and Information Technology, B.S. in Mechatronics Engineering, B.S. in Mechatronics and Robotics Engineering Technology, B.S. in Mobile Computing, B.S. in Software Engineering, and B.S. in Technology and Business Management, and B.S. in Unmanned and Autonomous Systems. The library is currently supporting the following degrees at the graduate level: M.S. in Aviation, M.S. in Aviation Cybersecurity, M.S. in Computer Science, M.S. in Critical Infrastructure, M.S. in Cyber Analytics, M.S. in Cybersecurity, M.S. in Engineering Technology, M.S. in Information Systems Management, M.S. in Internet Engineering, M.S. in Unmanned and Autonomous Systems Policy and Risk Management, M.B.A., T.M.B.A. Business Analytics and Data Science, T.M.B.A. in Cybersecurity, D.Sc. in Cybersecurity, Ph.D. in Aviation, Ph.D. in Business Analytics and Decision Sciences, Ph.D. in Critical Infrastructure, Ph.D. in Manufacturing, Ph.D. in Product Management, Ph.D. in Technology, Ph.D. in Technology/M.S. in Research Methods Combination Program, and Ph.D. in Unmanned Systems Applications. Therefore, the library is fully prepared to support a **Ph.D. in Fire and Emergency Services**.

Services provided to online students include:

- “Ask the Librarian”
- Research Guides
- Tutorials
- Videos
- Online borrowing

The John G. and Beverley A. Puente Library provides access to management, decision science, and research methods materials through its 10,000-title book collection, e-books, and its 90 journal subscriptions. The library will continue to purchase new and additional materials in the management, decision science, and research methods area to maintain a strong and current collection in this subject area. Students can also access materials through the library's participation in Maryland's Digital eLibrary Consortium. This online electronic service provides access to numerous databases (Access Science, NetLibrary) that supply students with the



materials they need. Available databases include ProQuest, EBSCO, ACM, Lexis Nexis, Taylor Francis, and Sage Publications.

The Puente Library can provide access to historical management and decision science materials through its membership in the Maryland Independent College and University Association (MICUA) and the American Society of Engineering Education (ASEE). Reciprocal loan agreements with fellow members of these organizations provide the library access to numerous research facilities that house and maintain archives of management and decision science documents. The proximity of the University of Maryland, College Park and other local area research and academic libraries provide the Puente Library with quick access to these materials as well.

The library currently supports the needs students at the undergraduate, masters and doctoral levels.

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

- 1. Provide an assurance that the physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences. If the program is to be implemented within existing institutional resources, include a supportive statement by the President regarding adequate equipment and facilities to meet the program's needs.**

No new facilities are required for the program. The online class platform is web based and requires no additional equipment for the institution. The current Learning Management System, Canvas and Zoom, meets the needs of the degree program. The Business and Technology lab, Computer Science Lab, Cyber Lab, Robotics Lab, and Unmanned Systems Lab together meet the potential research needs of the students. The labs provide both local and virtual support.

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

- a. An institutional electronic mailing system**

Capitol Technology University provides an institutional electronic mailing system to all students and faculty. The capability is provided to all students and faculty in all the institution's modalities of course delivery. Capitol Technology University students and faculty are required to use the institution's email addresses (e.g., xxxxxxxx@captechu.edu) in all university matters and communications. The University uses the email capabilities in Microsoft Office 365 and Microsoft Outlook.

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

Capitol Technology University provides a robust Learning Management Systems (LMS) through the use of the Canvas LMS by Instructure ([www.canvaslms.com](http://www.canvaslms.com)). The University pairs Canvas with Zoom ([zoom.us](http://zoom.us)) to provide a platform for every student and faculty member to meet face-

to-face in a synchronous “live” mode of communication. The use of Canvas is required for every course offered at the University; as a result, every course has a classroom on Canvas and Zoom. All syllabi, grades, and assignments must be entered in to Canvas on a timely basis throughout the semester.

Canvas provides the world’s most robust LMS. It is a 21st Century LMS; Canvas is a native cloud, Amazon Web Service hosted system. The system is adaptable, reliable, and customizable. Canvas is easy to use for students and faculty. The system is fully mobile and has proven to be time-saving when compared to other systems. The following list provides the features of the system:

#### Time and Effort Savings

- **CANVAS DATA**  
Canvas Data parses and aggregates more than 280 million rows of Canvas usage data generated daily.
- **CANVAS COMMONS**  
Canvas Commons makes sharing a whole lot easier.
- **SPEEDGRADER ANNOTATIONS**  
Preview student submissions and provide feedback all in one frame.
- **GRAPHIC ANALYTICS REPORTING ENGINE**  
Canvas Analytics help you turn rich learner data into meaningful insights to improve teaching and learning.
- **INTEGRATED MEDIA RECORDER**  
Record audio and video messages within Canvas.
- **OUTCOMES**  
Connect each learning outcome to a specific goal, so results are demonstrated in clearly measurable ways.
- **MOBILE ANNOTATION**  
Open, annotate, and submit assignments directly within the Canvas mobile app.
- **AUTOMATED TASKS**  
Course management is fast and easy with automated tasks.
- **NOTIFICATION PREFERENCES**  
Receive course updates when and where you want - by email, text message, even Twitter or LinkedIn.
- **EASE OF USE**  
A familiar, intuitive interface means most users already have the skills they need to navigate, learn, and use Canvas.
- **IOS AND ANDROID**  
Engage students in learning anytime, anywhere from any computer or mobile device with a Web-standard browser.

- **USER-CUSTOMIZABLE NAVIGATION**  
Canvas intelligently adds course navigation links as teachers create courses.
- **RSS SUPPORT**  
Pull feeds from external sites into courses and push out secure feeds for all course activities.
- **DOWNLOAD AND UPLOAD FILES**  
Work in Canvas or work offline—it's up to you.
- **SPEEDGRADER**  
Grade assignments in half the time.

#### Student Engagement

- **ROBUST COURSE NOTIFICATIONS**  
Receive course updates when and where you want—by email, text message, and even Facebook.
- **PROFILE**  
Introduce yourself to classmates with a Canvas profile.
- **AUDIO AND VIDEO MESSAGES**  
Give better feedback and help students feel more connected with audio and video messages.
- **MULTIMEDIA INTEGRATIONS**  
Insert audio, video, text, images, and more at every learning contact point.
- **EMPOWER GROUPS WITH COLLABORATIVE WORKSPACES**  
By using the right technologies in the right ways, Canvas makes working together easier than ever.
- **MOBILE**  
Engage students in learning anytime, anywhere from iOS or Android, or any mobile device with a Web-standard browser.
- **TURN STUDENTS INTO CREATORS**  
Students can create and share audio, video, and more within assignments, discussions, and collaborative workspaces.
- **WEB CONFERENCING**  
Engage in synchronous online communication.
- **OPEN API**  
With its open API, Canvas easily integrates with your IT ecosystem.
- **BROWSER SUPPORT**  
Connect to Canvas from any Web-standard browser.
- **LTI INTEGRATIONS**  
Use the tools you want with LTI integrations.
- **MODERN WEB STANDARDS**

Canvas is built using the same Web technologies that power sites like Google, Facebook, and Twitter.

Lossless Learning

- **CANVAS POLLS**  
Gauge comprehension and incorporate formative assessment without the need for “clicker” devices.
- **MAGICMARKER**  
Track in real-time how students are performing and demonstrating their learning.
- **QUIZ STATS**  
Analyze and improve individual assessments and quiz questions.
- **LEARNING MASTERY FOR STUDENTS**  
Empower students to take control of their learning.

(Source: <https://www.canvaslms.com/higher-education/features>)

Capitol Technology University has been using Canvas for over five years. Canvas has proven to be a completely reliable LMS system that provides the necessary technological support for distance education/online learning.

**L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14):**

- 1. Table 1: Resources. Finance data for the first five years of the program implementation are to be entered. Figures should be presented for five years and then totaled by category for each year.**

**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                               | \$10,000         | \$0              | \$0              | \$0              | \$0              |
| 2. Tuition/Fee Revenue<br>(c + g below)            | \$96,444         | \$230,580        | \$455,868        | \$674,622        | \$904,230        |
| a. Number of F/T Students                          | 0                | 0                | 0                | 0                | 0                |
| b. Annual tuition/Fee rate                         | \$0              | \$0              | \$0              | \$0              | \$0              |
| c. Total F/T Revenue<br>(a x b)                    | \$0              | \$0              | \$0              | \$0              | \$0              |
| d. Number of P/T Students                          | 6                | 14               | 27               | 39               | 51               |
| e. Credit Hour Rate                                | \$893            | \$915            | \$938            | \$961            | \$985            |
| f. Annual Credit Hour                              | 18               | 18               | 18               | 18               | 18               |
| g. Total P/T Revenue<br>(d x e x f)                | \$96,444         | \$230,580        | \$455,868        | \$674,622        | \$904,230        |
| 3. Grants, Contracts and<br>Other External Sources | 0                | 0                | 0                | 0                | 0                |
| 4. Other Sources                                   | 0                | 0                | 0                | 0                | 0                |
| <b>TOTAL (Add 1 – 4)</b>                           | <b>\$106,444</b> | <b>\$230,580</b> | <b>\$455,868</b> | <b>\$674,622</b> | <b>\$904,230</b> |

This proposal builds upon an existing degree programs.

- A. Provide a narrative rationale for each of the resource categories. If resources have been or will be reallocated to support the proposed program, briefly discuss those funds.**

**1. Reallocated Funds**

Capitol Technology University has reallocated funds during Year 1 for support of program and course development, online support, office materials, travel, professional development, and initial marketing. There is no substantial impact on the institution because of the reallocation of these funds. The reallocated funds will be recovered after the first year. The program is expected to be self-sustaining after Year 1.

**2. Tuition and Fee Revenue**

Tuition is calculated to include an annual 2.5% tuition increase. A 20% attrition rate has been calculated.

**3. Grants and Contracts**

There are currently no grants or contracts.

**4. Other Sources**

There are currently no other sources of funds.

**5. Total Year**

No additional explanation or comments needed.

2. **Table 2: Expenditure.** Finance data for the first five years of the program implementation are to be entered. Figures should be presented for five years and then totaled by category for each year.

**TABLE 2: EXPENDITURES**

| <b>Expenditure Category</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)            | \$72,000         | \$148,320        | \$229,154        | \$314,707        | \$405,186        |
| a. Number of FTE                    | 1                | 2                | 3                | 4                | 5                |
| b. Total Salary                     | \$60,000         | \$123,600        | \$190,962        | \$262,256        | \$337,655        |
| c. Total Benefits (20% of salaries) | \$12,000         | \$24,720         | \$38,192         | \$52,451         | \$67,531         |
| 2. Admin Staff (b + c below)        | \$4,658          | \$4,798          | \$4,942          | \$5,090          | \$5,243          |
| a. Number of FTE                    | .07              | .07              | .07              | .07              | .07              |
| b. Total Salary                     | \$3,850          | \$3,966          | \$4,084          | \$4,207          | \$4,333          |
| c. Total Benefits                   | \$809            | \$833            | \$858            | \$883            | \$910            |
| 3. Support Staff (b + c below)      | \$14,250         | \$29,039         | \$57,475         | \$86,400         | \$114,950        |
| a. Number of FTE                    | .25              | .5               | 1.00             | 1.5              | 1.75             |
| b. Total Salary                     | \$11,875         | \$24,000         | \$47,500         | \$72,000         | \$83,125         |
| c. Total Benefits                   | \$2,375          | \$5,039          | \$9,975          | \$14,400         | \$16,625         |
| 4. Technical Support and Equipment  | \$585            | \$1,365          | \$2,080          | \$2,665          | \$3,640          |
| 5. Library                          | \$0              | \$0              | \$0              | \$0              | \$0              |
| 6. New or Renovated Space           | \$0              | \$0              | \$0              | \$0              | \$0              |
| 7. Other Expenses                   | \$30,000         | \$41,500         | \$43,450         | \$45,041         | \$46,692         |
| <b>TOTAL (ADD 1-7)</b>              | <b>\$131,493</b> | <b>\$225,022</b> | <b>\$337,101</b> | <b>\$453,903</b> | <b>\$575,711</b> |

- A. Provide a narrative rationale for each expenditure category. If expenditures have been or will be reallocated to support the proposed program, briefly discuss those funds.**

**1. Faculty**

Table 2 reflects the faculty hours in total, but this does not imply that these are new hire requirements.



## **2. Administrative Staff**

Capitol Technology University will continue with current the administrative staff through the proposed time period.

## **3. Support Staff**

Capitol Technology University will slowly increase support staff.

## **4. Technical Support and Equipment**

Software for courses is available free to students or is freeware. Additional licenses for the LMS will be purchased by the university at the rate of \$65 per student in Year 1; the license fee per student is calculated to increase at \$5 per year per student. No additional equipment is needed.

## **5. Library**

Money has been allocated for additional materials to be added to the on campus and virtual libraries to ensure the literature remains current and relevant. However, it has been determined that the current material serves the needs of this degree due to the extensive online database.

## **6. New or Renovated Space**

No new or renovated space is needed.

## **7. Other Expenses**

Funds have been allocated for office materials, travel, professional development, course development, marketing, additional scholarships.

## **8. Total Year**

No additional explanation or comments needed.

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

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

The assessment process at the University consists of a series of events throughout the Academic Year. The results of each event are gathered by the University Assessment Team and stored in Canvas for analysis and use in annual reports, assessments, etc. The University Assessment Team analyzes the results, develops any necessary action plans, and monitors implementation of the action plans.

#### Academic Year Assessment Events:

Fall Semester:

- At the August Faculty Retreat, the faculty reviews any outstanding student learning challenges that have not been adequately addressed. The issues are brought to the University Academic Deans for review and development of implementation plans.
- Faculty submit performance plans consistent with the mission and goals of the University and department. The documents are reviewed and approved by the University Academic Deans.
- Department Chairs and University Academic Deans review the Graduating Student Survey data.
- Department Chairs and University Academic Deans review student internship evaluations.
- Department Chairs and University Academic Deans review grade distribution reports from the spring and summer semesters.
- Department Chairs and University Academic Deans review student course evaluations from the Summer Semester.
- Departments conduct Industrial Advisory Board meetings to review academic curriculum recommendations. The Advisory Board meets to begin curriculum review or address special issues that may arise related to curriculum. Based on an analysis and evaluation of the results, the University Academic Deans, faculty and the advisory boards will develop the most effective strategy to move the changes forward.
  - NOTE: A complete curriculum review for degrees in the Doctoral Programs occurs every 2 years. In most cases, the changes only require that the University Academic Deans inform the Chief Academic Officer and provide a report that includes a justification and the impact of the changes as well as a strategic plan. Significant changes normally require the approval of the Chief Academic Officer and the Executive Council.
- University Academic Deans and the Vice President for Academic Affairs attend the Student Town Hall and review student feedback with department chairs.
- Department Chairs conduct interviews with potential employers at the Fall Career Fair.
- Post-residency, the University Academic Deans meet with the faculty to review the student learning progress and discuss needed changes.

#### Spring Semester:

- Faculty Performance Plans are reviewed with faculty to identify issues of divergence and to adjust the plan as needed.
- Department Chairs and University Academic Deans review grade distribution reports from the Fall Semester.
- Department Chairs and University Academic Deans review the Graduating Student Survey data.
- Department Chairs and University Academic Deans review student course evaluations from the Fall Semester and the Spring Semester (in May before the Summer Semester begins).
- Department Chairs and University Academic Deans meet to review the content of the graduating student, alumni, and course surveys to ensure the surveys continue to meet the University's assessment needs.
- At Annual Faculty Summit in May, the faculty review and discuss student learning challenges from the past academic year and provide recommendations to the Academic Deans for review and development of implementation plans.
- Department Chairs conduct interviews with potential employers at the Spring Career Fair.
- Departments conduct Industrial Advisory Board meetings to review academic curriculum recommendations.

In addition to these summative assessments, the University Academic Deans meets with the Department Chairs on a weekly basis to review current student progress. This formative assessment allows for immediate minor changes, which increase faculty effectiveness and, ultimately, student outcomes.

The Faculty Senate meets monthly during August through April. The Faculty Senate addresses issues that impact student outcomes as those issues emerge. The leadership of the Faculty Senate then provides a report on the matter to the University Academic Deans. The report may include a recommendation or a request to move forward with a committee to further examine the issue. In most cases, the changes only require the University Academic Deans to inform the Chief Academic Officer and provide a report that includes a justification and the impact of changes as well as a strategic plan. Significant changes normally require the approval of the Chief Academic Officer and the Executive Council.

- 2. Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.**

*Student Learning Outcomes:*

Student learning outcomes for the proposed **Ph.D. in Fire and Emergency Services** will be measured using the instruments identified in Section G and Section M (i.e., those instruments tailored for a Ph.D.), the assessment measures indicated in each module of the doctoral program, and the accreditation requirements of the University's regional accreditor [i.e., Middle States Commission in Higher Education (MSCHE)] and our degree specific accrediting organizations (i.e., IACBE, ABET, NSA, DHS). This program is designed to meet the requirements of MSCHE. The program will be reviewed for accreditation by MSCHE. The University is in good standing with all its accrediting bodies.

*Student Retention:*

The University maintains a comprehensive student retention program under the Vice President for Student Engagement. The program assesses student retention at all levels, including individual courses and degree. During the semester and term, the University's Drop-Out Detective capability, within its Learning Management System (Canvas), provides an early alert at the course level to potential issues related to retention. Within the Office of Student Life, Academic Advisors monitor Drop-Out Detective and contact students who appear to have issues affecting their academic performance. The Graduate Academic Advisors work with each student to create a plan to remove any barriers to success. The Graduate Academic Advisors also work with the course instructors as needed to gain additional insight that may be helpful to correcting the situation.

Each student also meets with their Academic Advisor each semester to evaluate their progress toward degree completion. An updated plan of action is developed for each student for their next semester's registration and each succeeding semester through degree completion.

The Vice President for Student Engagement also meets on a regular basis with the Chief Academic Officer to review the student retention within each degree program and address any issues that appear to be impediments to degree completion.

*Student and Faculty Satisfaction:*

Evaluations and assessment of Student and Faculty satisfaction occur every semester. Faculty members are evaluated every semester by students enrolled in their courses. Students are required to complete a course evaluation online within a specified time frame at the end of the semester for every enrolled course or they are locked out of Canvas (the University's Learning Management System) until they complete each survey. Every faculty member is also required to review each of their courses for the semester.

The Department Chairs and University Academic Dean review the student evaluations for every course offered at the University. The Department Chairs and University Academic Dean also review faculty satisfaction every semester. If changes are needed at the course level, the changes are developed and implemented by the faculty responsible for the courses upon approval of the University Academic Dean. If changes are needed at the faculty level, the Department Chairs will make the changes. At the end of this cycle, an evaluation is repeated and the results are analyzed with the appropriate stakeholders regarding the effectiveness of the changes. This is an ongoing process. The University has a team in charge of outcomes and assessment supporting the formal assessment measures.

*Cost Effectiveness:*

Based on the year-long inputs, evaluations, and reviews described in Section M from faculty, students, industry representatives, and Department Chairs, the University Academic Dean prepares the proposed academic budget for each program for the upcoming year. Budget increases are tied to intended student learning improvements and key strategic initiatives.

Each academic program is also monitored by the Vice President for Finance and Administration throughout every semester and term for its cost effectiveness. Additionally, the revenue and costs of every University program are reviewed annually by the Executive Council and Board of Trustees prior to approving the next year's budget.

**N. Consistency with the State's Minority Student Achievement goals (as outlined in COMAR 13B.02.03.05 and in the State Plan for Post-Secondary Education):**

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

Capitol Technology University is a majority/minority school. Our programs attract a diverse set of students. Special attention is provided to recruit females into the STEM and multidisciplinary programs at all degree levels – undergraduate, master's, and doctoral. The University also recruits minority populations for all of its undergraduate degrees as well as for its graduate level degrees: M.B.A., M.S. in Aviation, M.S. in Aviation Cybersecurity, M.S. in Computer Science, M.S. in Critical Infrastructure, M.S. in Cyber Analytics, M.S. in Cybersecurity, M.S. in Engineering Technology, M.S. in Information Systems Management, M.S. in Internet Engineering, M.S. in Unmanned and Autonomous Systems Policy and Risk Management, T.M.B.A. in Business Analytics and Data Science, T.M.B.A. in Cybersecurity, D.Sc. in Cybersecurity, Ph.D. in Aviation, Ph.D. in Business Analytics and Decision Sciences, Ph.D. in Critical Infrastructure, Ph.D. in Manufacturing, Ph.D. in Product Management, Ph.D. in Technology, Ph.D. in Technology/M.S. in Research Methods Combination Program, and Ph.D. in Unmanned Systems Applications. The same attention will be given to the **Ph.D. in Fire and Emergency Services**.

**O. Relationship to Low Productivity Programs Identified by the Commission:**

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

This program is not associated with a low productivity program identified by the Commission.

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

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

Capitol Technology University is fully eligible to provide distance education. The University has a long history of providing high-quality distance education. The university is accredited regionally by the Middle States Commission in Higher Education (MSCHE) and through the following specialized accrediting organizations: International Accreditation Council of Business Education (IACBE), Accreditation Board for Engineering and Technology (ABET), NSA, and DHS. All five accrediting organizations have reviewed the University's distance education program as part of their accreditation process. Capitol Technology University is fully accredited by MSCHE, IACBE, ABET, NSA, and DHS. The University is in good standing with all its accrediting bodies.

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

Capitol Technology University has a long history of providing high quality distance education/online learning that complies with the Council of Regional Accrediting Commissions (C-RAC) Interregional Guidelines for the Evaluation of Distance Education. The University will also continue to comply with the C-RAC guidelines with the proposed **Ph.D. in Fire and Emergency Services** program.

- a. Council of Regional Accrediting Commissions (C-RAC) Interregional Guidelines for the Evaluation of Distance Education.**

- 1. Online learning is appropriate to the institution's mission and purposes.**

Online learning is consistent with the institution's mission, purpose and history. Please refer to Section A of this proposal.

- 2. The institution's plans for developing, sustaining, and, if appropriate, expanding online learning offerings are integrated into its regular planning and evaluation processes.**

All programs at the University – online, hybrid, and on-ground – are subject to the same regular planning, assessment, and evaluation processes. Please see Section M of this proposal for the detailed process.

- 3. Online learning is incorporated into the institution's systems of governance and academic oversight.**

All programs at the University – online, hybrid, and on-ground – are subject to the same systems of governance and academic oversight. Please refer to Section G and Section M of this proposal.

- 4. Curricula for the institution’s online learning offerings are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.**

Online programs/courses meet the same accreditation standards, goals, objectives, and outcomes as traditional on-ground instruction at the University. The online course development process incorporated the Quality Matters research-based set of standards for quality online course design to ensure academic rigor of the online course is comparable to the traditionally offered course. The University Academic Deans, Department Chairs, and faculty review curriculum annually. Courses are reviewed at the end of each term of course delivery. This process applies to online and traditional courses. In addition, advisory boards are engaged in the monitoring of course quality to ensure quality standards are met regardless of the delivery platform.

- 5. The institution evaluates the effectiveness of its online learning offerings, including the extent to which the online learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals.**

Online programs/courses meet the same accreditation standards, goal, objectives, and outcomes as traditional classroom delivery. Learning platforms are chosen to ensure high standards of the technical elements of the course. The University Academic Deans monitor all course conversions from in-class to online to ensure the online course is academically equivalent to traditionally offered course and the technology is appropriate to support the expected rigor and breadth of the course.

- 6. Faculty responsible for delivering the online learning curricula and evaluating the students’ success in achieving the online learning goals are appropriately qualified and effectively supported.**

The Department of Doctoral Programs, where this degree will be sponsored, is staffed by a qualified University Academic Dean, Dr. Ian McAndrew. Other appropriately credentialed faculty with multi-disciplinary level skills will also be part of the delivery team.

The evaluation of the courses in the program will be done using the same processes as all other programs at the University. (Please see Section M.) All Capitol Technology University faculty teach in the traditional classroom environment and online. (Please see faculty qualifications in Section I of this document.)

- 7. The institution provides effective student and academic services to support students enrolled in online learning offerings.**

Students can receive assistance in using online learning technology via several avenues. Aides are available to meet with students and provide tutoring support in both subject matter and use of the technology. Tutors are available in live real-time sessions

using Zoom or other agreed upon tools. Pre-recorded online tutorials are also available.

In addition to faculty support, on ground and online tutoring services are available to students in a one-on-one environment.

Laboratories (on ground and virtual) are available for use by all students and are staffed by faculty and tutoring staff who provide academic support.

Library services and resources are appropriate and adequate. Please refer to Section J of this document and the attached letter from the University President. The library adequately supports the students learning needs.

**8. The institution provides sufficient resources to support and, if appropriate, expand its online learning offerings.**

The University has made the financial commitment to the program. (Please refer to Section L). The University has a proven track-record of supporting degree completion for several years.

**9. The institution assures the integrity of its online offerings.**

Faculty currently employed at the University will act as an Internal Advisory Board for program changes, including course and program development. All current faculty were selected based on domain experience and program-related teaching experience.

When new faculty or outside consultants are necessary for the design of courses offered, our Human Resource Department initiates a rigorous search and screening process to identify appropriate faculty to design and teach online courses. All new faculty are selected on domain experience and program-related teaching experience.

The University online platform offers several avenues to support instructors engaged in online learning. The Director of our Online Learning Division is highly skilled and trained in faculty development. Several seminars and online tutorials are available to the faculty every year. Mentors are assigned to new faculty. Best practice sharing is facilitated through the University Academic Deans, Department Chairs, and formal meetings.

The assessment for distance learning classes and students in this program will be the same as for all doctoral programs at the University. Faculty will provide required data on student achievement. The Learning Management System provides data on student achievement. Proof of these assessments is available during the class and post-class to the Executive Council, University Academic Deans, and Department Chairs. On an annual basis, the information is reported to the University's accreditation authorities (e.g., MSCHE, IACBE, ABET, NSA, and DHS).