PROPOSAL FOR:

X NEW INSTRUCTIONAL PROGRAM
_____ SUBSTANTIAL EXPANSION/MAJOR MODIFICATION
COOPERATIVE DEGREE PROGRAM
X WITHIN EXISTING RESOURCES or _____ REQUIRING NEW RESOURCES

CAPITOL Technology University

Institution Submitting Proposal

Fall 2025
Projected Implementation Date

Bachelor of Science
Award to be Offered

Aviation Maintenance and Management
Title of Proposed Program

5302.00
Suggested HEGIS Code

29.0401
Suggested CIP Code

Aviation
Department of Proposed Program

Dr. Frank Turney
Name of Department Head

Dr. Mohamed Shehata
Dean of Academic

mshehata@captechu.edu
Contact E-Mail Address

(240) 965-2473
Contact Phone Number

3-26-25
Signature and Date

President/Chief Executive Approval

MARCH 26, 2025
Date

Date Endorsed/Approved by Governing Board

CAPITOL
Technology University

March 26, 2025

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

Dear Dr. Rai,

Capitol Technology University is requesting approval to offer a B.S. in Aviation Maintenance and Management. The degree curriculum will be delivered by existing university faculty and supported through the development of new courses. Capitol Technology University's mission is to provide a practical education in engineering, computer science, information technology, and business—preparing individuals for professional careers and enabling them to thrive in a dynamic world. A key aspect of the university's mission is to advance hands-on knowledge in areas that are relevant to students and valued by prospective employers, within the framework of Capitol Tech's degree programs. The university believes that a B.S. in Aviation Maintenance and Management aligns closely with this mission.

The demand for professionals in Aviation Maintenance and Management is steadily increasing due to the growing complexity and scale of the aviation industry. This program is in response to that need. The B.S. in Aviation Maintenance and Management degree is designed for individuals who are looking to advance their knowledge and skills in maintaining, managing, and leading operations within the aviation sector.

To respond to the needs of the aviation industry, we respectfully submit for approval a B.S. in Aviation Maintenance and Management. Please find the required letter confirming the adequacy of the university's library to serve the needs of the students in this degree.

Respectfully,

Bradford L. Sims, PhD
President

CAPITOL
Technology University

March 26, 2025

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

Dear Dr. Rai,

This letter is in response to the need for confirmation of the adequacy of the library of Capitol Technology University to support the proposed **B.S. in Aviation Maintenance and Management**. As president of the university, I confirm that the library resources, including support staff, are more than adequate to support the **B.S. in Aviation Maintenance and Management**. Additionally, the university remains dedicated and committed to the continuous improvement of its library resources by providing sufficient budget to ensure the success of our students.

Respectfully,

Bradford L. Sims, PhD
President

Office Use Only: PP#

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.

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

Payment Submitted: (●) Yes ( ) No
Payment Type: ( ) R*STARS # (●) Check #
Payment Amount: 850.00
Date Submitted: 4/1/2025

Department Proposing Program	Aviation
Degree Level and Degree Type	Bachelor of Science (B.S.)
Title of Proposed Program	BS Of Science in Aviation Maintenance and Management
Total Number of Credits	121
Suggested Codes	HEGIS: 5302.00 CIP: 29.0401
Program Modality	(●) On-campus ( ) Distance Education (fully online) ( ) Both
Program Resources	(●) Using Existing Resources ( ) Requiring New Resources
Projected Implementation Date (must be 60 days from proposal submisison as per COMAR 13B.02.03.03)	(●) Fall ( ) Spring ( ) Summer Year: 2025
Provide Link to Most Recent Academic Catalog	URL: https://catalog.captechu.edu/
Preferred Contact for this Proposal	Name: Dr. Mohamed Shehata Title: Dean of Academics Phone: (240) 965-2473 Email: mshehata@captechu.edu
President/Chief Executive	Type Name: Bradford Sims Signature: [signature] Date: 3-26-25
	Date of Approval/Endorsement by Governing Board: MARCH 26, 2025

Revised 1/2021

Bachelor of Science (B.S.) in Aviation Maintenance and Management
Capitol Technology University
Laurel, Maryland

A. Centrality to mission and planning priorities:

1. Program Description and Alignment with Institutional Mission

   The Bachelor of Science (B.S.) in Aviation Maintenance and Management at Capitol Technology University is designed to provide students with a comprehensive education in aviation maintenance, management, and technology, equipping them with the technical, analytical, and leadership skills needed to succeed in the aerospace and aviation industries.

   This program integrates engineering principles, regulatory compliance, safety protocols, and management strategies to prepare graduates for careers in aircraft maintenance, aviation operations, airline management, and aerospace manufacturing. Students will gain expertise in aircraft systems, maintenance procedures, aviation safety regulations, logistics, and business management—ensuring they are well-prepared for leadership roles in the field.

   The B.S. in Aviation Maintenance and Management directly supports the institution's mission of providing STEM-focused, hands-on, career-relevant education that prepares students for leadership in technical and engineering-based fields. The program aligns with industry standards, including FAA regulations and best practices in aviation maintenance and operations, ensuring that graduates contribute effectively to airline maintenance, aircraft safety, and aviation logistics.

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, and the B.S. in Aviation Maintenance and Management program directly supports each of these initiatives:

   a. Expand Educational Offerings, Increase Program Completion: The introduction of this program aligns with the university's goal to expand its academic portfolio by offering a high-demand, industry-relevant degree in aviation maintenance and management. By incorporating FAA certification preparation, industry internships, and hands-on learning experiences, the program enhances student engagement and increases the likelihood of program completion.

   b. Increase Enrollment and Institutional Awareness: The aviation sector is experiencing significant workforce shortages, making this program highly attractive to prospective students. Capitol Technology University will leverage targeted marketing efforts, partnerships with aviation organizations, and outreach to high school STEM programs to increase enrollment. The addition of this program also enhances the university's reputation as a leader in STEM-focused, career-oriented education, furthering its national and global recognition.

c. Improve the Utilization of University Resources and Institutional Effectiveness While Expanding Revenue: This program will maximize the use of existing engineering and technology resources while incorporating specialized aviation training facilities. The expected enrollment growth will contribute to institutional revenue, ensuring the program's long-term sustainability. Additionally, collaboration with industry sponsors and grant funding sources will help offset program costs while enhancing institutional effectiveness.

d. Increase the Number and Scope of Partnerships: The university is committed to building strong relationships with aviation companies, government agencies, and professional organizations to provide students with real-world experiences, internship opportunities, and job placement support. Partnerships with FAA-certified training centers, airlines, and aerospace manufacturers will ensure students receive the necessary skills and certifications to transition directly into the workforce. These collaborations will also create opportunities for faculty research, industry advisory input, and workforce development initiatives.

Evidence of Institutional Priority

The B.S. in Aviation Maintenance and Management has been identified as a strategic priority for Capitol Technology University due to:

a. Industry leaders and advisory board members have expressed a strong need for qualified aviation maintenance professionals, reinforcing the importance of this program.
b. The program is designed to fill industry talent gaps and address shortages in aviation maintenance personnel, in alignment with state and regional economic priorities.
c. The university has committed to hiring faculty with industry experience, upgrading aviation training labs, and securing FAA-aligned resources to ensure program success.
d. This program aligns with Capitol Technology University's core mission to provide hands-on, industry-driven education, further establishing its leadership in aviation, engineering, and technology sectors.

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.)

The B.S. in Aviation Maintenance and Management program will be adequately funded for at least the first five years through a combination of institutional support, industry partnerships, tuition revenue, and external funding sources. Capitol Technology University has developed a financial plan to ensure the program's sustainability while maintaining high-quality education, faculty resources, and necessary technical equipment. Funding sources include:

a. Capitol Technology University has allocated initial funding for faculty recruitment, program development, and aviation lab resources to establish a strong foundation for the program.
b. Collaborations with aviation companies, airlines, and aircraft manufacturers will provide financial backing, in-kind donations (e.g., equipment and software), and internship funding to enhance student learning experiences.

c. The program is designed to become self-sustaining within three to five years, with tuition revenue covering faculty salaries, operational costs, and curriculum enhancements as student enrollment increases.
d. The university will pursue aviation workforce development grants, STEM education funding, and state support to bolster financial stability and student scholarship opportunities.
e. The program's alignment with FAA certification requirements will attract students seeking Airframe and Powerplant (A&P) credentials, increasing enrollment and ensuring strong placement in the aviation industry.
f. Capitol Technology University will engage alumni, industry donors, and philanthropic organizations to establish scholarships and funding initiatives that support long-term program growth

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

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

Capitol Technology University is committed to providing the necessary administrative, financial, and technical resources to ensure the success and sustainability of the B.S. in Aviation Maintenance and Management program. The university will allocate dedicated faculty and staff to oversee program development, student advising, and industry partnerships. Additionally, financial support will be provided through institutional funding, industry collaborations, and grant opportunities to maintain state-of-the-art facilities, procure necessary training equipment, and continuously enhance the curriculum to align with industry advancements.

The university's IT and technical support teams will ensure that students and faculty have access to cutting-edge aviation software, maintenance simulation tools, and online learning platforms to support both on-campus and hybrid learning experiences. Furthermore, faculty will receive ongoing professional development to stay current with emerging trends and regulations in aviation maintenance and management.

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 sustaining the B.S. in Aviation Maintenance and Management program for the long term, ensuring that students who enroll have the opportunity to complete their degrees. The university has a comprehensive teach-out plan in place should unforeseen circumstances require program adjustments. This includes maintaining core faculty, ensuring course availability, and providing academic advising to assist students in meeting graduation requirements.

In addition, Capitol Technology University will continue to monitor program demand, student success rates, and industry needs to support long-term viability. The institution's commitment to continuous evaluation and improvement will ensure that the program remains aligned with workforce requirements and student career outcomes, reinforcing its role as a high-value, industry-driven degree offering.

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

The proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University is designed to meet a pressing statewide workforce need. It integrates FAA Part 147-certified technical aviation training with leadership, compliance, and operations management education to prepare students for both entry-level technical roles and advancement into supervisory positions in the aviation sector.

a) The need for advancement and evolution of knowledge

Aviation technology is rapidly evolving, driven by advancements in automation, artificial intelligence, predictive diagnostics, and advanced materials. In response to these trends, the proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University is designed with an innovative curriculum that integrates FAA Part 147-certified technical training with coursework in emerging aviation systems and operational technologies.

The program distinguishes itself by embedding simulation-based training, AI-driven diagnostics, and industry-partnered capstone projects, allowing students to work on real-world aviation challenges using the latest tools and practices. These elements create an educational model that adapts to ongoing industry change, ensuring graduates are not only job-ready but prepared for leadership in modern aviation maintenance operations.

This approach strongly supports the Maryland State Plan's Goal 3: Innovation – "Foster innovation in all aspects of Maryland higher education to improve access and student success." Specifically, it aligns with: Priority 8: Promote a culture of risk-taking - "Promote a culture of risk-taking and experimentation that encourages the development of new ideas, pedagogies, pathways, and technologies to improve education delivery and outcomes."

The integration of emerging technologies, hands-on experiential learning, and real-time industry collaboration represents a strategic risk-taking approach to curriculum design. This fosters educational innovation, improves student success, and ensures that Maryland's higher education system remains responsive to workforce demands in the aviation sector.

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

The program creates accessible career pathways for underrepresented groups, particularly minority, first-generation, female, and veteran students. Strategies include targeted recruitment, scholarships, and transfer agreements with community colleges. These efforts align with:

Goal 1: Student Access – "Ensure equitable access to affordable and high-quality postsecondary education for all Maryland residents."

Priority 4: Analyze systems that impact how specific student populations access affordable and high-quality postsecondary education – This includes outreach and support for underserved populations to ensure equitable participation in high-demand fields.

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

Although Capitol is not a Historically Black Institution (HBI), 51% of its students identify as minorities, including 34% who are Black/African American. The University aims to expand access through partnerships with HBIs, particularly UMES, enabling transfer opportunities and shared STEM initiatives.

This approach reinforces: Priority 1: Study the affordability of postsecondary education in Maryland – By offering transfer pathways and scholarship support, Capitol helps reduce financial barriers.
Priority 2: Examine and improve financial literacy programs for students and families to encourage financial planning to pay for postsecondary education – Outreach will include advising resources and financial aid education to underserved students.

The program is designed to complement HBI offerings rather than duplicate them, enhancing diversity in Maryland's aviation maintenance workforce and promoting institutional collaboration.

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

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

1. Student Access
2. Student Success
3. Innovation

GOAL 1: STUDENT ACCESS

"Ensure equitable access to affordable and quality postsecondary education for all Maryland residents."

Capitol Technology University is committed to ensuring equitable access to high-quality and career-focused education in aviation maintenance and management for all Maryland residents. The University meets this commitment through its inclusive admissions policies, financial aid opportunities, and academic support services designed to reach a diverse student body.

The B.S. in Aviation Maintenance and Management program expands access to high-demand, well-paying careers in the aviation industry, particularly for underrepresented populations. According to the Maryland Department of Labor, the state faces a shortage of skilled aviation maintenance technicians, necessitating targeted educational pathways for Maryland students to enter this growing field.

The University's student demographics reflect its commitment to accessibility:

a. 51% of students are from minority backgrounds, with 34% Black/African American students.
b. 22% of students are military veterans, who will benefit from the program's FAA certification alignment and hands-on learning opportunities.
c. A growing percentage of female students are encouraged to pursue careers in aviation, an industry historically dominated by men.

To further expand educational access, the University offers:

a. Transfer agreements with Maryland community colleges to create a seamless pathway for students pursuing aviation careers.
b. Scholarship opportunities and financial aid support to help reduce barriers to entry for economically disadvantaged students.
c. Flexible learning options, including hybrid coursework and industry apprenticeships, to accommodate working students and adult learners.

These strategies strongly support Goal 1: Student Access—"Ensure equitable access to affordable and quality postsecondary education for all Maryland residents." The program also directly aligns with the following 2022 State Plan priorities:

- Priority 1: "Study the affordability of postsecondary education in Maryland."
- Priority 2: "Examine and improve financial literacy programs for students and families to encourage financial planning to pay for postsecondary education."
- Priority 4: "Analyze systems that impact how specific student populations access affordable and high-quality postsecondary education.".

Goal 2: Success

"Promote and implement practices and policies that will ensure student success."

The proposed B.S. in Aviation Maintenance and Management program is specifically designed to promote student retention, degree completion, and successful job placement in a high-demand sector. Capitol Technology University supports students through a comprehensive system of academic services, including:

a. Academic advising, tutoring, and career mentorship to keep students on track for graduation.
b. FAA certification preparation to ensure students are job-ready upon graduation.
c. Industry partnerships with aviation companies, airlines, and government agencies to provide internships, apprenticeships, and career placements.

These strategies directly support Priority 5: "Maintain the commitment to high-quality postsecondary education in Maryland."

The U.S. Bureau of Labor Statistics (BLS) projects a 6% job growth rate for aircraft and avionics mechanics from 2022 to 2032, with salaries exceeding $75,000 per year in Maryland. The Maryland Aviation Workforce Report also indicates that a shortage of qualified technicians is limiting the state's ability to expand its aviation sector.

To improve student affordability and completion rates, Capitol Technology University offers:

a. A tuition guarantee program, ensuring costs remain predictable for students throughout their studies.
b. A military and veteran support program, allowing service members to apply military experience toward degree completion.
c. A structured Early Alert system, which allows faculty and advisors to intervene early if students face academic challenges.

These strategies reflect Priority 6: Improve systems that prevent timely completion of an academic program and Priority 7: Enhance the ways postsecondary education serves as a platform for ongoing lifelong learning.

Goal 3: Innovation

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

Capitol Technology University has a strong history of embracing innovation in STEM and applied learning. The proposed Bachelor of Science in Aviation Maintenance and Management continues this tradition by delivering a cutting-edge academic program that redefines how technical aviation education is delivered in Maryland. The program combines FAA-certified technical training with modern aviation technologies and real-world applications, positioning graduates at the forefront of the industry.

Key program innovations include:

a. Integration of emerging aviation technologies such as automation, AI-driven diagnostics, and predictive maintenance software to align with industry trends.
b. Use of aviation maintenance simulation labs to provide hands-on training without requiring costly aircraft access.
c. Industry-led capstone projects that allow students to work on real-world problems with aviation companies, preparing them for high-tech aviation careers.

These elements represent instructional risk-taking and curricular experimentation, which directly support Priority 8: "Promote a culture of risk-taking and experimentation that encourages the development of new ideas, pedagogies, pathways, and technologies to improve education delivery and outcomes."

In addition to instructional design, Capitol has formed strategic partnerships with aviation employers, regulatory agencies, and aerospace innovators to ensure the program remains agile and relevant. This collaboration not only enriches the student experience but ensures alignment with Maryland's growing aviation and aerospace sector, including expansion at BWI, Martin State Airport, and Patuxent River Naval Air Station, as recognized by the Maryland Department of Commerce.

By combining curricular innovation, technological integration, and real-world engagement, the program exemplifies how Maryland higher education institutions can innovate to enhance access, support student success, and respond to regional workforce needs.

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 for Graduates of the Proposed Program

Graduates of the B.S. in Aviation Maintenance and Management program will be well-prepared for employment in various sectors within the aviation and aerospace industries. The demand for skilled aviation maintenance professionals is driven by increasing airline operations, technological advancements in aircraft systems, and the need to maintain stringent safety standards.

Potential Industries and Employment Opportunities

Graduates can pursue careers in:

a. Commercial Airlines – Engaging in aircraft maintenance, repair, and overhaul (MRO) operations for major airlines and regional carriers.
b. Corporate and Private Aviation – Managing maintenance and operations of private and corporate aircraft fleets.
c. Aerospace Manufacturing – Working with aircraft manufacturers and suppliers on component maintenance, quality assurance, and production processes.
d. Government and Military Aviation – Serving in roles within agencies such as the Federal Aviation Administration (FAA), Department of Defense (DoD), NASA, and various military branches, focusing on aviation maintenance and safety oversight.
e. Unmanned Aerial Systems (UAS) and Drone Technology – Maintaining and repairing emerging drone technologies for commercial and defense applications.
f. Airport Operations and Management – Coordinating maintenance activities and ensuring regulatory compliance at major airports.
g. Aviation Consulting and Regulatory Compliance – Advising organizations on aircraft safety, maintenance protocols, and adherence to aviation laws and regulations.

Employment Statistics and Salary Expectations in Maryland

According to the U.S. Bureau of Labor Statistics (BLS), as of May 2023, there were approximately 1,510 aircraft mechanics and service technicians employed in Maryland, representing about 0.56% of the state's workforce in this occupation. (BLS)

The average annual salary for these professionals in Maryland varies based on experience, certifications, and specific job roles:

a. Aircraft Mechanics and Service Technicians: The median annual wage is approximately $75,020. (BLS)
b. Avionics Technicians: The median annual wage is around $77,420.

In specific regions within Maryland, salary averages can differ:

a. Baltimore Area: The estimated total pay for an aircraft mechanic is $97,465 per year, with an average base salary of $87,354. (Glassdoor)
b. Southern Maryland: Avionics technicians earn an average annual salary of $83,885, with an average hourly wage of $40.33. (Maryland Department of Labor)

It is important to note that salaries can vary based on factors such as specific employer, level of experience, and additional certifications.

Expected Level of Entry

Graduates can anticipate entering the workforce at entry to mid-level positions, depending on prior experience, certifications, and participation in internships or cooperative education programs. Individuals who obtain the FAA Airframe and Powerplant (A&P) certification may qualify for higher-level technical and supervisory roles upon graduation. With 2-5 years of experience, professionals can advance into management and leadership positions in aviation maintenance and operations.

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 B.S. in Aviation Maintenance and Management program is designed to address the growing demand for skilled professionals in the aviation maintenance sector, both nationally and within Maryland.

a. National Projections: According to the U.S. Bureau of Labor Statistics (BLS), employment of aircraft and avionics equipment mechanics and technicians is projected to grow 5% from 2023 to 2033, aligning with the average growth rate for all occupations. This growth is anticipated to result in approximately 13,400 job openings annually over the decade, primarily due to the need to replace workers transitioning to other occupations or exiting the workforce.
b. Maryland State Projections: At the state level, the Maryland Department of Labor provides detailed occupational projections. Employment for Aircraft Mechanics and Service Technicians is projected to increase from 1,510 positions in 2022 to 1,590 by 2032, reflecting a growth rate of 5.3% over the decade. This equates to 80 new positions, with an average of 130 annual openings when accounting for replacements and growth. Employment for Avionics Technicians is expected to rise from 307 positions in 2022 to 342 by 2032, indicating a growth rate of 11.4%. This represents 35 new positions, with an average of 32 annual openings over the period. These projections underscore a steady demand for aviation maintenance professionals in Maryland, with notable growth anticipated in avionics specialization.
c. Industry Demand and Workforce Initiatives: The 2024 Maryland Statewide Workforce Development Plan emphasizes the importance of strengthening key sectors, including aviation, to meet current and future workforce needs. The plan highlights the necessity of aligning educational programs with industry demands to ensure a pipeline of qualified professionals.

d. Furthermore, the 2024 Annual Report by the Maryland Department of Labor identifies a pressing need for skilled labor across various sectors, including aviation. Employers anticipate hiring additional workers in the coming years, underscoring the critical need for programs that prepare individuals for these roles.

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 Five Years

The aviation industry is facing a growing and sustained demand for qualified maintenance professionals, driven by factors such as increasing global air traffic, ongoing technological advancements, and a rapidly retiring workforce. Multiple authoritative sources provide quantifiable data underscoring the urgent need for educational and training programs to prepare the next generation of aviation maintenance technicians.

a. Industry Projections – Boeing's Pilot and Technician Outlook**:**
Boeing projects a global need for approximately **626,000 new maintenance technicians** over the next 20 years. This figure highlights the critical importance of expanding training capacity to ensure a pipeline of certified professionals capable of supporting the evolving needs of the aviation sector.
b. National Employment Data – U.S. Bureau of Labor Statistics (BLS):
According to the BLS, employment of aircraft and avionics equipment mechanics and technicians is expected to grow by 5% from 2023 to 2033, resulting in an estimated 13,400 annual job openings. This demand is largely fueled by increased air travel activity and the need to replace retiring or transitioning workers.
c. State-Level Projections – Maryland Department of Labor:
State occupational projections echo national trends, indicating a **steady increase in demand** for aviation maintenance professionals in Maryland. While specific employment figures may vary by year and specialty, the data align with national forecasts, confirming the need for expanded training infrastructure within the state. Detailed statistics are available from the Maryland Department of Labor's published occupational projections.
d. Current Job Market Indicators – Maryland-Based Openings (March 2025):
As of March 2025, there are **144 aviation maintenance technician job openings** across Maryland, underscoring the current and immediate need for skilled professionals in the local job market.
e. Educational and Training Needs – Programmatic Response:
The consistent national and regional demand for aviation maintenance technicians highlights the necessity of accredited programs that provide rigorous, hands-on training aligned with FAA and industry standards. The proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University directly addresses this need by equipping students with both the technical competencies and leadership skills required for success in today's aviation workforce. Graduates will be prepared to fill vital roles in maintenance operations, safety oversight, and supervisory positions, helping to close the growing skills gap in the field.

4. Provide Data Showing the Current and Projected Supply of Prospective Graduates

To assess the current and projected supply of prospective graduates for the proposed B.S. in Aviation Maintenance and Management program, it is important to examine existing aviation maintenance programs in Maryland and the surrounding region. These programs serve as potential feeders into the broader workforce pipeline and indicate both the regional interest in aviation careers and the current limitations in graduate output.

The Pittsburgh Institute of Aeronautics (PIA) – Hagerstown Campus in Maryland offers a 16-month Aviation Maintenance Technology (AMT) diploma/certificate program totaling 1,900 clock hours. The program admits new cohorts three times annually, with upcoming start dates on August 28, 2024; January 2, 2025; and April 28, 2025. With an average class size of 17 students per instructor, PIA reports strong graduate placement outcomes. Each cohort graduates approximately 25 students, producing an estimated 50 graduates per year.

The Community College of Baltimore County (CCBC) – Catonsville Campus offers a two-year Associate Degree in Aviation Maintenance Technology. This program has demonstrated steady enrollment and graduation rates over the past five years. Institutional estimates indicate that CCBC contributes approximately 30 graduates annually to the regional aviation workforce.

The University of the District of Columbia (UDC) – Community College offers a two-year Associate of Applied Science (AAS) in Aviation Maintenance Technology. The program reports an 80% success rate for graduates earning their Airframe and Powerplant (A&P) mechanic license within six months of program completion. Many graduates find employment at major regional airports such as Washington National Airport (DCA) and Dulles International Airport (IAD). UDC contributes approximately 20 graduates per year.

Together, these institutions produce an estimated 100 graduates annually—50 from PIA, 30 from CCBC, and 20 from UDC—who are prepared to enter the aviation maintenance field. Over the next five years, this represents a projected supply of approximately 500 trained professionals entering the workforce.

However, this projected supply is not sufficient to meet Maryland's labor market demand. As discussed in Section 3, the Maryland Department of Labor projects approximately 162 annual job openings in aviation maintenance-related fields, equating to 810 openings over five years. This reveals a workforce gap of roughly 310 positions, emphasizing the urgent need for expanded capacity in aviation maintenance education.

The proposed B.S. in Aviation Maintenance and Management program at Capitol Technology University is designed to help close this gap by preparing graduates with both FAA-aligned technical competencies and the managerial skills necessary to take on supervisory roles. In doing so, the program not only strengthens the supply of qualified professionals in Maryland but also enhances the leadership pipeline in a rapidly evolving aviation industry.

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.

Several institutions in Maryland and the surrounding region offer programs related to aviation maintenance and management. Below is an overview of these programs, highlighting their similarities and differences compared to the proposed B.S. in Aviation Maintenance and Management program.

a. University of Maryland Eastern Shore (UMES)

The University of Maryland Eastern Shore (UMES) offers multiple academic pathways in aviation through its four-year, in-person Bachelor of Science in Aviation Sciences. This degree includes concentrations in Professional Pilot, Aviation Management, Aviation Electronics, and Aviation Software, each designed to prepare students for specialized roles within the aviation industry. In addition to these degree concentrations, UMES has recently launched a separate FAA Part 147-certified Aviation Maintenance Technician (AMT) program, which typically spans 18 to 24 months. The AMT program is designed to prepare students for FAA Airframe and Powerplant (A&P) certification and operates independently from the bachelor's degree programs, requiring separate enrollment and completion as a standalone credential.

While UMES offers a diverse set of aviation concentrations and a separate FAA-certified maintenance program, these offerings are delivered through separate academic tracks. Students who wish to pursue both aviation maintenance and management at UMES must enroll in two distinct programs—the Bachelor of Science in Aviation Sciences (with a management concentration) and the FAA Part 147 Aviation Maintenance Technician (AMT) certificate program. These tracks are not formally integrated, which can lead to scheduling challenges, longer time to completion, and limited overlap in coursework between technical training and academic development.

In contrast, the Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University is a fully integrated four-year degree program. It embeds FAA Part 147 A&P certification training directly within the bachelor's curriculum alongside a rigorous sequence of courses in aviation operations, safety, compliance, leadership, and management. This structure ensures students graduate not only with the credentials to enter the workforce as licensed maintenance technicians, but also with the skills and academic foundation to advance into supervisory and operational leadership positions.

Furthermore, Capitol already offers a separate Professional Pilot bachelor's program, which enables the proposed program to remain exclusively focused on aviation maintenance and management. This eliminates the need to split faculty, resources, or curriculum across multiple concentrations, allowing for a more in-depth and industry-aligned learning experience in the maintenance domain.

b. Community College of Baltimore County (CCBC)

Both CCBC's certificate and the proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University address key elements of aviation management. However, the programs differ significantly in depth, scope, and credential level. CCBC's offering is a short-term certificate program, typically completed in under two years and focused on operational support roles. In contrast, Capitol's program is a comprehensive four-year bachelor's degree that integrates FAA maintenance certification training with advanced coursework in leadership, safety, compliance, and operations management. This makes Capitol's program more suitable for students

seeking long-term career advancement in both technical and managerial roles within the aviation industry.

c. Pittsburgh Institute of Aeronautics (PIA) – Hagerstown Campus

The Pittsburgh Institute of Aeronautics (PIA) – Hagerstown Campus offers an Aviation Maintenance Technology (AMT) diploma program that prepares students for FAA Airframe and Powerplant (A&P) certification. This full-time, 16-month intensive program consists of 1,900 clock hours and focuses entirely on hands-on technical training in aircraft maintenance.

PIA's AMT program is FAA Part 147-approved and is designed for individuals seeking immediate entry into the aviation maintenance workforce. The curriculum emphasizes practical skills in airframe structures, engine systems, and troubleshooting techniques. While it effectively prepares students for FAA certification, the program does not include academic coursework in management, leadership, or operations, and it does not confer a college degree.

In contrast, the proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University integrates FAA Part 147 maintenance training within a comprehensive four-year bachelor's degree. Alongside technical instruction, the curriculum includes coursework in aviation management, safety, regulatory compliance, and leadership development. This unique combination is designed to produce graduates who are not only FAA-certified technicians but also well-prepared for supervisory and operational leadership roles within aviation maintenance teams.

d. University of the District of Columbia Community College (UDC-CC)

The University of the District of Columbia Community College (UDC-CC) offers an Associate of Applied Science in Aviation Maintenance Technology. This two-year program is focused on preparing students for the FAA Airframe and Powerplant (A&P) mechanic license, a credential required to work as a certified maintenance technician in the airline industry.

Both UDC-CC's associate degree and Capitol Technology University's proposed bachelor's program provide students with a foundation in aviation maintenance education. However, while UDC-CC's program is limited to technical training and FAA licensure preparation, Capitol's proposed four-year bachelor's degree combines FAA Part 147 training with aviation management, leadership, and compliance coursework, offering a broader and more advanced curriculum designed to support long-term career growth in maintenance supervision and operations.

The Aviation Maintenance Technician Program – Salisbury-Wicomico County is a 12-month training program developed to create a local pipeline of qualified aircraft mechanics and to strengthen the aviation and aeronautics sector in the region. The program focuses on hands-on, technical instruction to prepare students for entry-level employment in aviation maintenance.

While both the Salisbury-Wicomico program and Capitol's proposed degree seek to address the need for skilled aviation maintenance professionals, the key distinction lies in scope and outcome. Salisbury's program is designed for quick workforce entry and does not confer a degree or include management training. In contrast, Capitol's program offers a bachelor's degree that integrates

technical skills with aviation leadership and operational management, preparing graduates for a wider range of career opportunities including supervisory and compliance roles.

e. Aviation Maintenance Technician Program – Salisbury-Wicomico County

The Aviation Maintenance Technician Program – Salisbury-Wicomico County is a 12-month FAA Part 147-certified program designed to meet regional workforce needs by producing qualified aviation maintenance professionals. Developed in partnership with Piedmont Airlines, the Salisbury-Wicomico County Regional Airport, and Salisbury-Wicomico Economic Development, the program provides hands-on technical training to prepare students for the FAA Airframe and Powerplant (A&P) certification required to work in the aviation maintenance field.

Both the Salisbury-Wicomico program and the proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University aim to address the growing demand for trained aviation maintenance personnel. However, while the Salisbury program is focused on rapid workforce entry and does not offer a degree or management coursework, Capitol's program provides a comprehensive four-year bachelor's degree. It combines FAA Part 147 training with aviation leadership, safety, operations, and compliance education, preparing graduates not only for entry-level technician roles, but also for supervisory and management positions in the aviation industry.

2. Provide Justification for the Proposed Program

The proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University responds directly to a critical and growing need in the aviation industry. The program is designed to produce graduates who are both FAA-certified maintenance technicians and prepared for leadership roles in aviation operations and compliance. By integrating FAA Part 147 technical training with academic coursework in management, safety, and operations, this program offers a seamless, career-oriented pathway not currently available in Maryland's higher education system.

While various institutions in the state offer aviation programs, none combine hands-on FAA training with bachelor-level academic development in a single degree. As a result, students who want to pursue careers that require both technical expertise and leadership capabilities must currently navigate multiple programs across different institutions—leading to longer completion times, higher costs, and disconnected learning experiences. Capitol's proposed program eliminates these barriers by embedding certification and leadership development into one four-year curriculum, aligned with the needs of both students and employers.

a. Growing Industry Demand for Aviation Maintenance Professionals

The aviation industry is facing a well-documented labor shortage in maintenance and technical services. This shortage is being driven by several factors: increased global air travel, rapid technological advancements in aircraft systems, and a retiring workforce of experienced

technicians. As a result, demand for qualified aviation maintenance professionals is not only growing, but becoming more urgent and specialized.

According to Boeing's 2023 Pilot and Technician Outlook, there will be a global need for approximately 626,000 new aircraft maintenance technicians over the next 20 years to support the expanding commercial fleet. Similarly, the U.S. Bureau of Labor Statistics (BLS) projects that employment for aircraft and avionics equipment mechanics and technicians will grow by 5% between 2023 and 2033, with around 13,400 job openings annually across the country. At the state level, the Maryland Department of Labor projects a 5.3% increase in aircraft mechanic positions by 2032, translating to approximately 130 job openings per year.

These statistics clearly underscore the need for comprehensive, degree-granting programs that not only prepare students for FAA certification but also equip them with the supervisory, regulatory, and operational skills that today's employers require. The proposed program is uniquely positioned to meet this demand

b. Lack of Bachelor's Degree Programs in Aviation Maintenance in Maryland

Maryland currently lacks a four-year, bachelor's-level program that combines FAA-certified aviation maintenance training with leadership and management education. While the University of Maryland Eastern Shore (UMES) offers a Bachelor of Science in Aviation Sciences with concentrations such as Aviation Management and Professional Pilot, it does not include FAA A&P certification as part of the degree. Students who wish to become certified maintenance technicians must pursue separate training through external programs, resulting in fragmented career preparation.

Similarly, institutions like the Pittsburgh Institute of Aeronautics (PIA) and the Community College of Baltimore County (CCBC) provide certificate and associate degree programs focused on foundational maintenance or operational knowledge, but they do not offer bachelor's degrees or integrated management training. These programs are valuable but limited in scope, and they do not serve students seeking advancement into supervisory or administrative roles in aviation maintenance.

The proposed program at Capitol Technology University will fill this gap by offering a single, four-year bachelor's degree that leads to both FAA A&P licensure and academic qualifications in aviation leadership and operations. It will also serve as a natural transfer pathway for students completing associate degrees or certificates at community colleges and technical schools in the region.

c. Alignment with Maryland's Workforce and Economic Development Goals

The proposed program strongly supports the strategic priorities outlined in both the Maryland State Plan for Postsecondary Education (2021–2025) and the Maryland Workforce Development Strategic Plan (2024–2028). These initiatives emphasize increasing access to high-demand STEM careers, improving student success through structured degree pathways, and promoting innovation in workforce development.

By preparing students for FAA certification and mid- to high-level careers in aviation maintenance operations, this program aligns with state efforts to build a resilient, future-ready workforce. It also responds to the goals identified in the Maryland Aviation Commission's 2024 Report, which highlights the urgent need for skilled aviation personnel to support operations at key state facilities, including BWI Thurgood Marshall Airport, Martin State Airport, and Patuxent River Naval Air Station.

Incorporating aviation law, compliance, safety, and unmanned aerial systems (UAS) into the curriculum also reflects Maryland's interest in growing high-tech sectors such as defense, aerospace, and transportation infrastructure. Capitol's program will contribute directly to these objectives by producing graduates who are trained in both technical execution and strategic oversight.Expanding educational access to high-demand career fields.

d. Competitive Advantage and Industry Collaboration

The program has been developed with input from industry experts to ensure alignment with employer needs, FAA standards, and emerging aviation technologies. Capitol Technology University plans to actively engage with regional airlines, MRO (Maintenance, Repair, and Overhaul) providers, and aerospace manufacturers to create a pipeline of internship, co-op, and full-time job opportunities for students.

Additionally, the university will collaborate with the FAA and industry associations to maintain certification pathways, update training content, and ensure continued relevance in a rapidly evolving field. These partnerships will help students build real-world skills, gain professional exposure, and enhance their employability upon graduation.

This program will also serve as a strategic differentiator for Capitol Technology University, positioning it as the only institution in Maryland offering an integrated bachelor's degree in aviation maintenance and management—a credential that meets the growing need for professionals who can both maintain complex systems and lead teams in regulatory and safety-critical environments.

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

The proposed Bachelor of Science in Aviation Maintenance and Management at Capitol Technology University is not expected to negatively impact the implementation or maintenance of high-demand programs at Maryland's Historically Black Institutions (HBIs). Currently, no HBI in Maryland offers a program that combines FAA Part 147-certified aviation maintenance training with bachelor's-level education in leadership and operations management. Therefore, the Capitol program fills a distinct gap in the higher education ecosystem, offering a pathway that is not currently available within the curriculum of any HBI.

For example, while the University of Maryland Eastern Shore (UMES) offers a Bachelor of Science in Aviation Sciences, its focus lies in flight training, aviation management, aviation electronics, and aviation software—not in FAA-certified aircraft maintenance training. The

proposed Capitol program targets a separate workforce need: the preparation of students to enter the technical side of the aviation industry as FAA-certified maintenance professionals, while also equipping them with the skills to take on supervisory and operations roles.

In fact, rather than competing with HBI offerings, the Capitol program is designed to complement and potentially strengthen them. Through articulation agreements, transfer pathways, and shared outreach, students who begin their education in aviation or STEM-related programs at HBIs could seamlessly transfer into Capitol's program to complete their bachelor's degree and obtain FAA certification. This model supports the longevity and appeal of HBI programs, providing their graduates with advanced training and enhanced career outcomes in a high-demand technical field.

By expanding the range of academic options available to underrepresented and minority students without overlapping with existing programs, Capitol Technology University's initiative enhances—not diminishes—the ability of HBIs to maintain and grow their high-demand academic offerings.

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

   The proposed program at Capitol Technology University is designed with a targeted, technical, and workforce-oriented focus and is therefore unlikely to interfere with or alter the uniqueness or institutional identities of Maryland's Historically Black Institutions (HBIs). Each HBI in Maryland holds a distinct mission rooted in the advancement of educational equity, community empowerment, and cultural inclusivity—goals which the Capitol program fully supports but does not attempt to replicate.

   For example: Bowie State University (BSU) focuses on holistic student development grounded in excellence, diversity, and integrity, Coppin State University (CSU) promotes lifelong learning, leadership, civic engagement, and economic empowerment, Morgan State University (MSU) emphasizes broad access to education, reflecting the full diversity of Maryland's population, and UMES supports economic and workforce development in part through aviation-related programs but does not offer FAA-certified maintenance training within a bachelor's degree.

   Capitol Technology University's proposed B.S. in Aviation Maintenance and Management is explicitly designed to address a technical and career-focused niche, aligned with Capitol's institutional mission to deliver applied STEM education that meets evolving industry needs. It does not seek to replicate the broader liberal arts, community engagement, or access-focused identities that define HBIs.

   Moreover, Capitol recognizes the value of collaborative engagement with HBIs. The university is actively exploring partnerships with UMES and other institutions to create cross-institutional pipelines that expand access to high-paying aviation careers for students from historically underrepresented communities. In this way, the program supports HBI missions by providing new opportunities for career advancement and degree completion within a field that aligns with Maryland's economic development goals.

In summary, the Capitol program respects and reinforces the unique missions and institutional identities of Maryland's HBIs, and is structured to contribute positively to the broader higher education landscape by filling a gap—not creating redundancy—in aviation workforce education.

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 proposed B.S. in Aviation Maintenance and Management was developed through a rigorous review process led by the University's New Programs Group. This group includes representatives from faculty, university administrators, and the Executive Council. The program was designed in response to the growing demand for skilled aviation maintenance professionals, particularly those with FAA Part 147 training and leadership skills in aviation maintenance operations.

   The faculty overseeing this program bring diverse industry and academic expertise in aviation maintenance, aerospace systems, aeronautical engineering, mechanical engineering, electrical engineering, business management, and regulatory compliance. These faculty members hold relevant industry certifications, including FAA Airframe and Powerplant (A&P) certifications, FAA Designated Mechanic Examiner (DME) credentials, and professional aviation safety certifications. A full list of faculty backgrounds is provided in Section I of this proposal.

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

Educational Objectives:

a. Students will develop expertise in aircraft maintenance, troubleshooting, and repair procedures, ensuring compliance with FAA regulations and industry standards.
b. Students will apply leadership and management principles in aviation maintenance operations, focusing on safety, logistics, and workforce management.
c. Students will demonstrate an understanding of aviation safety protocols, human factors, and risk management strategies to improve aircraft maintenance efficiency and safety.
d. Students will integrate technical knowledge of aircraft systems, avionics, and propulsion systems into maintenance and repair practices.
e. Students will exhibit professionalism, ethical decision-making, and regulatory compliance in aviation maintenance environments.
f. Students will analyze and implement emerging technologies in aviation maintenance, including predictive maintenance, digital diagnostics, and automation.
g. Students will be prepared to obtain FAA Airframe and Powerplant (A&P) certification, ensuring their ability to work as licensed aircraft maintenance technicians.

Learning Outcomes:

Upon graduation, students will:

a. Demonstrate competency in troubleshooting, repairing, and maintaining aircraft systems, including airframes, engines, avionics, and control surfaces.
b. Apply FAA Part 147 training standards to aircraft maintenance procedures and regulatory compliance.
c. Utilize technical manuals, blueprints, and digital maintenance software to conduct accurate diagnostics and repairs.
d. Exhibit proficiency in aviation maintenance safety protocols, including risk assessment and human factors mitigation strategies.
e. Demonstrate effective communication and teamwork in aviation maintenance environments.
f. Analyze and apply supply chain management, budgeting, and logistics principles to aviation maintenance operations.
f. Obtain FAA Airframe & Powerplant (A&P) certification, qualifying for positions as aircraft maintenance technicians, maintenance supervisors, and aviation operations managers.

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 in accordance with the Middle States Commission on Higher Education (MSCHE) accreditation standards and FAA Part 147 certification requirements for aviation maintenance programs.

Under MSCHE Standard V: Educational Effectiveness Assessment, the University will:

1. Define clear educational goals at the institutional, degree, and program levels, ensuring alignment with relevant industry expectations.
2. Utilize structured and systematic assessment methods, conducted by faculty and aviation professionals, to evaluate student achievement of program objectives.
3. Implement curriculum assessments that focus on:
   a. Ensuring students achieve technical competency in aircraft maintenance.
   b. Preparing students for FAA Airframe & Powerplant (A&P) licensure.
   c. Evaluating aviation maintenance safety and compliance knowledge.
   d. Analyzing and improving teaching methods based on assessment results.

Additionally, the FAA Part 147 certification standards will serve as a benchmark for student evaluation, ensuring that graduates meet industry-required competencies. The university will integrate FAA-approved practical and knowledge-based assessments to validate students' readiness for A&P certification exams.

b) Document student achievement of learning outcomes in the program

The University will document student achievement using the same methodologies as its existing aviation programs. Assessment data will be compiled and analyzed to track:

a. FAA A&P Exam Pass Rates – Monitoring the percentage of students passing the FAA Airframe and Powerplant certification exams.

b. Graduate Employment Rates – Tracking placement rates in aviation maintenance careers, including airline maintenance, MRO (maintenance, repair, and overhaul) facilities, and aerospace manufacturing.
c. Student Performance in Capstone & Lab Assessments – Evaluating hands-on technical skills demonstrated in aviation maintenance laboratories and senior projects.
d. Internship & Employer Feedback – Gathering feedback from industry partners regarding the job-readiness of program graduates.

The University will also publicly post assessment results on its website to maintain transparency and accountability regarding the program's effectiveness.

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 Bachelor of Science (B.S.) degree in Aviation Maintenance and Management provides students with the technical knowledge, hands-on skills, and management expertise required to excel in the aviation maintenance industry. This program is designed to address the growing demand for certified aircraft maintenance professionals and aviation operations managers in the global aviation sector. The curriculum integrates FAA Part 147 General, Airframe, and Powerplant training with business management principles, safety regulations, and emerging aviation technologies.

Students will gain expertise in aircraft maintenance procedures, troubleshooting techniques, safety compliance, aviation logistics, and regulatory oversight. The program emphasizes critical thinking, leadership, and operational efficiency to prepare graduates for FAA Airframe and Powerplant (A&P) certification and careers in airlines, corporate aviation, maintenance repair organizations (MROs), and aerospace manufacturing.

Graduates of this program will possess the skills and credentials necessary for employment in aircraft maintenance, aviation management, technical operations, and regulatory compliance roles across the industry.

Description of Program Requirements:

Entrance Requirements:

To be fully accepted into the program, students must be admitted to the University and must meet the FAA eligibility requirements for Airframe and Powerplant (A&P) certification. Students must complete the required FAA Part 147 curriculum and demonstrate technical proficiency through laboratory and practical assessments.

Degree Requirements:

The following is a list of courses required for the B.S. in Aviation Maintenance and Management. Students expecting to complete this degree must meet all prerequisites for the courses listed below.

The B.S. in Aviation Maintenance and Management program requires a total of 121 credits, distributed across various categories to ensure a comprehensive education in aviation maintenance and management.

Program Requirements

- FAA Part 147 General & Airframe Training – 24 credits
- Electronics/Engineering – 15 credits
- Mathematics & Physical Sciences – 19 credits
- Humanities and Social Sciences – 12 credits
- Technical Core – 21 credits
- English Communications – 6 credits
- Advanced Airframe & Powerplant Specialization – 24 credits

Core Courses and Descriptions

FAA PART 147 GENERAL & AIRFRAME TRAINING (24 CREDITS)

AVM 100 – Aircraft Fundamentals & FAA Regulations (3 credits)

This course provides an introduction to aircraft fundamentals and the regulatory framework governing aviation maintenance. Students will explore aircraft structures, powerplants, avionics systems, and aerodynamics while gaining a comprehensive understanding of the Federal Aviation Administration (FAA) regulations and standards that ensure aviation safety and compliance. Prerequisite(s): None

AVT-311 – Aircraft Systems and Components I - Introduction (3 credits)

Introduction to basic aircraft systems found on modern single and multi-engine reciprocating aircraft. Topics will include piston engines, electrical systems, hydraulic and pneumatic systems, radios and instruments, propellers, pressurization, maintenance requirements and documentation, and trouble shooting from the cockpit. Prerequisite(s): None

AVM 120 – Aircraft Propulsion & Engine Systems (3 credits)

This course provides a comprehensive introduction to aircraft propulsion systems, including both reciprocating (piston) engines and turbine (jet) engines. Students will explore the design, operation, and maintenance of aircraft engines, as well as fuel systems, ignition systems, and engine performance considerations. Prerequisite: AVM 100 or instructor approval

AVM 130 – Hydraulics, Pneumatics & Landing Gear Systems (3 credits)

This course provides an in-depth study of aircraft hydraulic and pneumatic systems, with a focus on landing gear operation, maintenance, and troubleshooting. Students will explore the principles of fluid dynamics, system components, and safety procedures essential for maintaining hydraulic and pneumatic systems in modern aircraft. Prerequisite: AVM 100 or instructor approval

AVM 140 – Aircraft Electrical & Avionics Systems (3 credits)

This course provides an introduction to aircraft electrical systems and avionics, focusing on the theory, operation, maintenance, and troubleshooting of electrical and electronic components in modern aircraft. Students will learn about aircraft power generation, distribution, wiring, navigation, and communication systems, as well as FAA regulations governing avionics maintenance. Prerequisite: AVM 100 or instructor approval

AVM 150 – FAA Compliance & Safety Standards (3 credits)

This course provides an in-depth study of FAA regulations, aviation safety standards, and compliance requirements essential for aviation maintenance professionals. Students will explore the legal framework that governs aircraft maintenance, operations, and inspections, ensuring compliance with Federal Aviation Administration (FAA) regulations, industry best practices, and international aviation safety standards. Prerequisite: AVM 100 or instructor approval

AVM 160 – Powerplant Systems & Aircraft Engine Maintenance (3 credits)

This course provides an in-depth study of aircraft powerplant systems and engine maintenance procedures, focusing on reciprocating (piston) and turbine (jet) engines. Students will learn about engine construction, operation, troubleshooting, and maintenance practices in compliance with FAA regulations. Prerequisite: AVM 120 or instructor approval

AVM 170 – Aircraft Inspection, Repair & Non-Destructive Testing (3 credits)

This course covers aircraft inspection procedures, repair techniques, and non-destructive testing (NDT) methods used in aviation maintenance. Students will gain an understanding of FAA regulations, maintenance documentation, and advanced diagnostic tools for identifying structural and mechanical issues in aircraft. Prerequisite: AVM 100 or instructor approval

ADVANCED AIRFRAME & POWERPLANT SPECIALIZATION (24 CREDITS)

AVM 200 – Composite Materials & Repair (3 credits)

This course provides an in-depth exploration of composite materials used in modern aircraft structures, focusing on their manufacturing, properties, inspection, damage assessment, and repair techniques. Students will learn industry-standard methods for handling, repairing, and maintaining composite structures while adhering to FAA regulations and safety protocols. Prerequisite: AVM 170 or instructor approval

AVT-313 – Aircraft Systems and Components II- Turbines and Aerodynamics (3 credits)

Continuation of AVT-311, introducing aircraft systems in turbine-powered aircraft. Topics include hydraulic and pneumatic systems, landing gear, brakes, environmental control, ice and rain protection, fire protection, aircraft turbine engines, and high-speed aerodynamics. High-speed aerodynamics includes compressibility effects, shock waves, and supersonic flight dynamics. Prerequisite(s): AVT 311

AVT-413 – Electronic Flight Management Systems (3 credits)

Introduces the concepts and functions of electronic flight management systems (FMS), including flight plans, GPS, INS, navigation, control display units, electronic flight instrument systems, and navigation displays. Prerequisite(s): AVT 313

AVT-421 – Global Navigation and NAVAIDS (3 credits)

Covers advanced navigation systems including HSI, RMI, Loran, Doppler, VOR, NDB, and GPS. Topics include navigation theory, in-flight emergencies, electronic instrumentation, and advanced flight computing problems. Extensive in-class computer flight simulation exercises reinforce concepts. Prerequisite(s): AVT 413

AVM 230 – Advanced Troubleshooting & Aircraft Systems Diagnostics (3 credits)

This course focuses on advanced methods for diagnosing and troubleshooting complex aircraft systems. Students learn systematic problem-solving approaches, use of diagnostic equipment, and interpretation of data from avionics, propulsion, hydraulic, and electrical systems. Emphasis is placed on root cause analysis and maintenance documentation aligned with FAA standards.
Prerequisite: AVM 140 and AVM 150

AVM 240 – FAA Practical Lab (Aircraft Assembly & Testing) (3 credits)

This hands-on lab course prepares students for FAA certification through practical experience in aircraft component assembly, system integration, and operational testing. Students will follow FAA-approved procedures for inspection, maintenance, and testing, focusing on safety, accuracy, and regulatory compliance.
Prerequisite: AVM 170

AVM 250 – FAA A&P Certification Exam Prep (3 credits)

This capstone-style review course prepares students for the FAA Airframe and Powerplant (A&P) certification exams. It includes comprehensive content review, practice exams, oral and practical exam preparation, and FAA test-taking strategies.
Prerequisite: AVM 240 (FAA Practical Lab)

AVM 260 – Unmanned Aerial Systems (UAS) & Drone Maintenance

This course introduces students to the systems, components, and maintenance protocols of unmanned aerial systems (UAS). Topics include drone structure, propulsion, electronics, sensors,

flight control, regulatory compliance, and troubleshooting of UAS platforms.
Prerequisite: AVM 120

TECHNICAL CORE (21 CREDITS)

AVT-251 – Air Transportation (3 credits)

This course provides an overview of the development of air transportation facilities, state and federal regulations, the Department of Transportation, the Federal Aviation Administration, the National Transportation Safety Board, and organization of commercial air transportation to include air carrier management, marketing, and pricing procedures. Prerequisite(s): None

AVT-254 – Airline Management (3 credits)

This course exposes the student to the management and organizational structure of air carriers to include airline scheduling, fleet planning, airline economics and financing, and air carrier labor relations. Prerequisite(s): None

AVT 255 – Aerodynamics (3 credits)

This course provides a comprehensive understanding of the principles and applications of aerodynamics within the context of aviation for single and multiengine airplanes. Students will delve into the fundamental concepts governing the behavior of aircraft in flight, including lift, drag, thrust, and weight. Through theoretical study, practical demonstrations, and hands-on exercises, participants will explore topics such as airflow patterns over airfoils, wing design, stability and control, as well as the effects of various factors such as altitude, speed, and angle of attack on aircraft performance. Additionally, the course will cover the latest advancements in aerodynamic technologies and their impact on modern aviation. Prerequisite(s): PH 201

AVT-256 – Aviation Safety (3 credits)

This course will concentrate primarily on the major aspects of aviation safety and the organizations and processes that govern commercial and general aviation safety in the United States. This course will provide an introduction to aviation safety programs, risk management, and the associated components of pilot psychology, physiology, human factors, and accident review and investigation. It will also include an overview of modern techniques used in accident investigation.

AVT-405 – Aviation Law (3 credits)

This course provides a detailed study of the regulations and procedures common to the aviation industry as well as a survey of the legal environment and the standards of conduct required of professional pilots. Case studies and discussion methods are used to show application of these statutes. Included is a study of latest legislation passed by the Congress and international conventions. Prerequisite(s): Senior standing.

AVT-457 –Senior Project I (3 credits)

Senior Project I serves as the first phase of the capstone experience for Aviation Maintenance and Management students. In this course, students will identify a real-world problem or innovation opportunity related to aviation maintenance, safety, regulatory compliance, or management efficiency.

Students will conduct literature reviews, define their project scope, develop a proposal, and create a project timeline. They will integrate knowledge from coursework in aircraft maintenance, operations management, safety regulations, and engineering principles to design a feasible project plan. Prerequisite: Senior standing in the Aviation Maintenance and Management program

AVT-458 –Senior Project II (3 credits)

Senior Project II is the culmination of the capstone experience, where students execute the approved project plan from Senior Project I. This hands-on course involves data collection, analysis, prototype development, system testing, or process evaluation in aviation maintenance or management.

Students will apply their technical expertise, leadership skills, and problem-solving abilities to implement their project. They will refine solutions based on testing, industry feedback, and best practices in aviation operations. Prerequisite: AVM 457 – Senior Project I

ELECTRONICS/ENGINEERING (15 CREDITS)

EL 100 – Introduction to DC/AC Circuits (2-2-3) (3 credits)

Basic electrical concepts and laboratory techniques. Current, voltage, resistance and power. Ohm's law, series and parallel resistive circuits. Kirchhoff's voltage and current laws. Loading effects on meters and supplies. Capacitors and Inductors. Charging and discharging. RC and RL time constants. Introduction to AC. Sinusional waveforms, phasors and use of the J operator. Reactance and admittance. Average values and RMS. Laboratory emphasis is on the proper use of standard meters, testing equipment and circuit breadboarding. MATLAB Part I: Introduction to MATLAB, variables, MATLAB functions, data types, writing a MATLAB program, using basic plotting functions. Corequisite(s): MA 112.

EL 150 – DC/AC Circuits and Analysis (2-2-3) (3 credits)

Applications of Kirchhoff laws to multiple source and complex series-parallel circuits. Determinants and matrices. Mesh and nodal analysis. Network Theorems: Thevenin, Norton, superposition, maximum power transfer. Review of complex number manipulation. Application to capacitive and inductive circuits, impedance. Complex Mesh analysis. Network theorems applied to complex RLC networks. Frequency response of RL and RC circuits. Plotting frequency response. Bode plots. Laboratory emphasis on the use of standard test equipment to verify theory. MATLAB Part II: input and output statements, importing data from spreadsheets, text files and other formats into MATLAB, conditional statements, loops, arrays, array functions.

Prerequisite(s): EL 100. Corequisite(s): Math (MA 114 or MA 114 Placement Test equivalent or MA 261 or MA 261 Placement Test equivalent)..

EL-200 – Electronic Devices/Circuits (2-2-3) (3 credits)

Principles and characteristics of semiconductor devices. Devices covered include diodes, Zener diodes, bipolar junction transistors, field-effect transistors, and operational amplifiers. Includes bias networks, operating points, maximum output and optimum bias, and DC and AC load lines. Input and output impedances, and voltage and current gains for each amplifier configuration. Prerequisite(s): EL 150.

EL-204 – Digital Electronics (3 credits)

Number systems, including binary, octal and hexadecimal bases. Binary arithmetic. Boolean algebra, Karnaugh map simplification. Design of combinational circuits. Decoders, multiplexers, flip-flops and other multi-vibrator circuits. Logic families including TTL, CMOS, ECL and others. Memory, shift registers and counters. Prerequisite(s): None

EL-262 – Microprocessors/Microassembly (3 credits)

Introduction to microprocessors. Architecture. Fetch and execute cycles. Microprocessor instruction set and assembly language programming. Hardware configuration, pin functions and modes of operation of a typical microprocessor. Basic I/O timing, control and memories. Prerequisite(s): EL 204.

MATHEMATICS & PHYSICAL SCIENCES (19 CREDITS)

CS 120 – Introduction to Python (3 credits)

The course will cover basic concepts and elements of computer programming using Python. Topics include variables, constants, operators, expressions, statements, branching, loops, and functions. Additionally, Python specific data structures, built-in functions, library modules and working with external files will be applied in developing working code. Prerequisite(s): None

CS-130 – Introduction to Programming Using Java (3 credits)

Introduces students to the discipline, methodologies, and techniques of software development. The emphasis is on developing essential programming skills, an understanding of object-oriented design and good software engineering practices using the Java programming language. Program constructs include selection, looping, arrays, graphical output of data, the use of the standard Java class library, and construction of simple user-defined classes. Programming projects are assigned as part of the homework requirements. Prerequisite(s): MA 110 or MA 112 or MA 114. Corequisite(s): CS 120 for BS in Computer Science majors only.

MA-112 – Intermediate Algebra (3 credits)

Designed for students needing mathematical skills and concepts for MA-114 and MA-261. In this course students are introduced to equations and inequalities and learn the language of algebra and related functions, including polynomial, rational, exponential and logarithmic functions. Other topics include solving equations, inequalities and systems of linear equations; performing operations with real numbers, complex numbers and functions; constructing and analyzing graphs of functions; and using mathematical modeling to solve application problems. Prerequisite(s): MA 005 or placement test score.

MA-114 – Algebra & Trigonometry (4 credits)

Designed for students needing mathematical skills and concepts for MA-261. Topics in this course are as follows. Algebra: basic operations on real and complex numbers, fractions, exponents and radicals. Determinates: Solution of linear, fractional, quadratic and system equations. Trigonometry: definition and identities, angular measurements, solving triangles, vectors, graphs and logarithms. Prerequisite(s): MA 112 or placement test score.

MA-128 – Introduction to Statistics (3 credits)

This course addresses probability: definitions, theorems, permutations and combinations; binomial, hypergeometric, Poisson and normal distributions; sampling distribution and central limit theorem; and estimation and hypothesis testing. Prerequisite(s): MA 110, MA 111 or MA 112

.PH-201 – General Physics I (3 credits)

This is a non-calculus-based physics course intended for credit in engineering technology courses. PH-261 is to be used for electrical, computer, and software engineering courses. PH-201 addresses mechanics, focusing on units, conversion factors, vector diagrams, translational equilibrium, friction, torque and rotational equilibrium, uniformly accelerated motion, projectiles, Newton's Law, work energy and power, kinetic and potential energy, conservation of energy, and impulse and momentum. It also addresses heat, focusing on temperature scales, thermal properties of matter, heat and temperature change, heat and change of phase, physics of heat transfer, and applications. Students completing this course may not enroll in PH-261 for additional credit. Prerequisite(s): MA 114

HUMANITIES AND SOCIAL SCIENCES (12 CREDITS)

HU-331 – Arts and Ideas (3 credits)

This course enables students to study and appreciate various forms of art, including painting, sculpture, architecture, music, drama, film, and literature through in-class and on-site experiences. The arts are also surveyed from an historical perspective, focusing primarily on eras in Western civilization. This enables students to sense the parallel development of the arts, of philosophy, and of sociopolitical systems and to recognize various ways of viewing reality. Prerequisite(s): EN 102

SS-351 – Ethics (3 credits)

This course is designed to help students improve their ability to make ethical decisions. This is done by providing a framework that enables the student to identify, analyze, and resolve ethical issues that arise when making decisions. Case analysis is a primary tool of this course. Prerequisite(s): EN 102Examination of ethical theories and their application in professional settings.

Social Science Elective (3 Credits)

This elective provides students with an opportunity to explore human behavior and social systems through disciplines such as sociology, psychology, political science, or economics. The course emphasizes critical thinking, ethical reasoning, and an understanding of cultural and societal dynamics that influence human interactions in personal, professional, and global contexts.
Prerequisite: None (may vary depending on specific course chosen)

Humanities Elective (3 Credits)

This elective allows students to engage with the human experience through the study of literature, philosophy, art, religion, or history. The course fosters critical analysis, creative thinking, and appreciation for cultural diversity and human values, encouraging reflection on historical and contemporary issues.
Prerequisite: None (may vary depending on specific course chosen)

ENGLISH COMMUNICATIONS (6 CREDITS)

EN-101 – English Communications I (3 credits)

This introductory college-level course focuses on effective oral and written communication skills and the development of analytical abilities through various reading and writing assignments. Students must demonstrate competence in writing mechanics, including grammar, sentence structure, logical content development, and research documentation through 4 essays/research papers. Rhetorical modes may include description, comparison/contrast, narrative, and process analysis. Students are expected to develop effective oral communication skills through speeches. Group projects will develop effective team skills such as decision-making, time management, and cooperation. Prerequisite(s): Acceptance based on placement test scores.

EN-102 – English Communications II (3 credits)

This sequel to EN-101 involves more sophisticated reading, writing, speaking, and research assignments. Students must demonstrate competence in writing mechanics, as well as advanced research skills, the ability to handle complex information, and effective team skills. Students write research papers: an information paper, a cause-and-effect paper, an argument paper, and a final research paper. Course includes group work. Presentations are required. Prerequisite(s): EN 1012.

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

The general education requirements for the B.S. in Aviation Maintenance and Management meet or exceed the specifications outlined in The Code of Maryland Regulations (COMAR). These requirements ensure that students receive a well-rounded education, integrating communication skills, critical thinking, mathematics, and sciences necessary for success in aviation maintenance and management careers.

Students in this program will complete coursework in English composition, humanities, social sciences, mathematics, and physical sciences to develop analytical reasoning, ethical decision-making, and effective communication skills. These foundational courses support the technical and managerial aspects of aviation maintenance by enhancing students' ability to interpret regulations, analyze data, and apply problem-solving strategies in professional settings.

For a detailed breakdown of the general education requirements and their alignment with COMAR, please refer to Section G.4 of this proposal.

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

The B.S. in Aviation Maintenance and Management program will be regionally accredited by the Middle States Commission on Higher Education (MSCHE). Additionally, the aviation maintenance coursework aligns with the Federal Aviation Administration (FAA) Part 147 regulations, ensuring that students receive the necessary training and qualifications to obtain Airframe and Powerplant (A&P) certification.

Students will complete the FAA Part 147 curriculum, which consists of General, Airframe, and Powerplant training. Upon successful completion, they will be eligible to sit for the FAA A&P certification exams, which consist of written, oral, and practical assessments. This certification is required for employment as a licensed Aircraft Maintenance Technician (AMT) in commercial, corporate, and government aviation sectors.

The FAA Airman Certification Standards (ACS) will be used to assess student achievement of learning outcomes in the program. The FAA ACS provides a structured framework for evaluating technical knowledge, safety protocols, risk management, and hands-on maintenance skills. These standards ensure that graduates meet the highest industry requirements and are prepared for FAA certification and employment in aviation maintenance and management roles.

This program will prepare students to meet the evolving needs of the aviation maintenance industry, ensuring compliance with FAA regulations and international maintenance standards.

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

The University has an agreement with a certified aviation maintenance training provider to support hands-on aircraft maintenance training in accordance with FAA Part 147 regulations. This collaboration ensures that students receive practical experience in aircraft repair, inspection, and maintenance operations, complementing their academic coursework at Capitol Technology University.

A copy of the agreement is attached as Annex A to this document. The partnering institution is recognized for its FAA-approved maintenance training programs and follows the FAA Part 147 curriculum standards to prepare students for their Airframe and Powerplant (A&P) certification exams.

This partnership allows students to gain real-world maintenance experience, ensuring they are well-prepared for careers as licensed aircraft maintenance technicians, maintenance managers, and aviation safety specialists.

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

The B.S. in Aviation Maintenance and Management program will ensure that students receive clear, complete, and timely information regarding curriculum, course and degree requirements, faculty/student interaction expectations, technology skills, technical equipment requirements, learning management system (LMS), academic support services, financial aid resources, and tuition and payment policies.

All program-related information will be available through multiple channels, including the University website, email, student handbook, and academic catalog. Additionally, students will receive printed materials upon request.

a. The full curriculum and course descriptions, including FAA Part 147 training requirements for Airframe and Powerplant (A&P) certification, will be published on the University website, academic catalog, and distributed during orientation.
b. The program includes a blend of classroom instruction, laboratory training, and hands-on aircraft maintenance experience, ensuring structured faculty-student engagement. Expectations for faculty-student interaction will be outlined in course syllabi and orientation materials.
c. Students will be required to have a basic understanding of engineering principles, electrical systems, and aviation safety protocols. The technical equipment requirements for the program,

including tools and access to aircraft maintenance simulation software, will be outlined in the welcome package, course syllabi, and University website.

d. All course content, assignments, and communications will be facilitated through Canvas, the University's Learning Management System (LMS). Students will receive training on using Canvas during orientation.
e. The University provides comprehensive student support services, including academic advising, tutoring, career counseling, and financial aid assistance. Information regarding these services will be communicated through virtual open houses, application processes, orientation sessions, Student Town Halls, and one-on-one counseling sessions.
f. Tuition, fees, and payment policies will be clearly outlined in the University catalog, financial aid office materials, and student onboarding resources. Information regarding scholarships, grants, and payment plans will be available to students through financial aid counseling and the University website.

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

The B.S. in Aviation Maintenance and Management program's advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and all services available. All promotional materials, including brochures, online content, and recruitment presentations, will be developed based on the approved program proposal submitted to the Maryland Higher Education Commission (MHEC).

a. The program will be promoted through the University website, social media platforms, printed brochures, career fairs, and targeted outreach efforts. All marketing materials will accurately outline the curriculum, program structure, career opportunities, and accreditation status.
b. Admissions counselors will provide prospective students with detailed information about coursework, FAA Part 147 certification preparation, hands-on maintenance training, and career pathways in aviation maintenance. The recruiting process will ensure transparency about tuition, financial aid, and expected job outcomes.
c. The admissions office will provide clear guidance on eligibility criteria, prerequisite requirements, transfer policies, and academic expectations. All information will be published on the University website, in recruitment presentations, and in admissions materials provided during campus visits, open houses, and virtual information sessions.

H. Adequacy of Articulation

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

The B.S. in Aviation Maintenance and Management program does not currently have formal articulation agreements with partner institutions. However, Capitol Technology University is actively

engaged in fostering transfer opportunities and is committed to expanding articulation partnerships with community colleges and technical training institutions offering aviation-related coursework.

a. The University has a strong track record of working with Maryland community colleges and technical schools to establish articulation pathways that allow students to transfer seamlessly into bachelor's degree programs.
b. The goal of the University is to develop new articulation agreements that will enable students from FAA-certified aviation maintenance programs, technical schools, and two-year degree programs to transfer credits efficiently and complete the B.S. in Aviation Maintenance and Management with minimal credit loss.
c. Dedicated transfer advisors are available to assist students in evaluating transfer credits, aligning prior coursework with program requirements, and ensuring a smooth transition into the program.

As the program grows, Capitol Technology University plans to establish articulation agreements with institutions that offer FAA Part 147-approved Airframe and Powerplant (A&P) training programs to create a clear academic pathway for students pursuing advanced education in aviation maintenance and management.

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, adjunct), and the course(s) each faculty member will teach.

Faculty members teaching in the B.S. in Aviation Maintenance and Management program at Capitol Technology University have extensive industry and academic experience in aviation maintenance, aerospace engineering, mechanical engineering, electrical engineering, and management. The faculty includes full-time and adjunct instructors with FAA certifications, terminal degrees, and substantial industry backgrounds, ensuring that students receive high-quality, hands-on training aligned with aviation maintenance standards and industry best practices.

The faculty members listed below are well-qualified in their respective areas and are committed to providing a high-quality learning experience for students in the Aviation Maintenance and Management program. Additional faculty with FAA certifications, doctoral qualifications, and industry expertise will be added as the program expands.

Course	Credits	Fcaulty	Qualification
AVM 100 – Aircraft Fundamentals & FAA Regulations. PR:	3	Michael Ripley	FAA A&P, IA Mechanic
AVT-311 Aircraft Systems and Components I - Introduction	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVM 120 – Aircraft Propulsion & Engine Systems	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 130 – Hydraulics, Pneumatics & Landing Gear Systems	3	Michael Ripley	FAA A&P, IA Mechanic

AVM 140 – Aircraft Electrical & Avionics Systems	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 150 – FAA Compliance & Safety Standards	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVM 160 – Powerplant Systems & Aircraft Engine Maintenance	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 170 – Aircraft Inspection, Repair & Non-Destructive Testing	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 200 – Composite Materials & Repair	3	Michael Ripley	FAA A&P, IA Mechanic
AVT-313 Aircraft Systems and Components II- Turbines and Aerodynamics.	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVT-413 Electronic Flight Management Systems	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVT-421 Global Navigation and NAVAIDS	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGL
AVM 230 – Advanced Troubleshooting & Aircraft Systems Diagnostics	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 240 – FAA Practical Lab (Aircraft Assembly & Testing)	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 250 – FAA A&P Certification Exam Prep	3	Michael Ripley	FAA A&P, IA Mechanic
AVM 260 – Unmanned Aerial Systems (UAS) & Drone Maintenance	3	Michael Ripley	FAA A&P, IA Mechanic
AVT-251 Air Transportation	3	Vicki Lester Bevan	CFI, CFI-IA, AGI
AVT-254 Airline Management	3	Vicki Lester Bevan	CFI, CFI-IA, AGI
AVT 255 Aerodynamics	3	Suzanne E Hall	MS Education, Ret. Col USAF
AVT-256 Aviation Safety	3	Vicki Lester Bevan	CFI, CFI-IA, AGI
AVT-405 Aviation Law	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVT-457 Aviation Senior Project I	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
AVT-458 Aviation Senior Project II	3	Frank Turney	J.D., CFI, CFI-IA, MEI, AGI
EL 100 Introduction to DC/AC Circuits	3	Mohamed Shehata (full-time	Ph.D. Electrical Engineering, M.S. Electrical Engineering, B.S. Electrical Machines and Power Systems
EL 150 DC/AC Circuits and Analysis	3		
EL-200 Electronic Devices/Circuits	3	Charles Conner (full-time	Ph.D. Electrical Engineering, M.S. Electrical
EL-204 Digital Electronics	3		
EL-262 Microprocessors/Microassembly	3		

			Engineering, B.S. Electrical Engineering
CS 120 Introduction to Python	3	Najam Hassan (Full-Time)	Ph.D. in Business Analytics and Decision Sciences, MS in Computer Science, BS in Computer Science
CS-130 Introduction to Programming Using Java	3		
MA-112 Intermediate Algebra	3	Hasna Banu (Adjunct)	Ph.D. Theoretical Physics, M.S. Mathematics, B.S. Mathematics
MA-114 Algebra & Trigonometry	4		
MA-128 Introduction to Statistics	3	Joseph Conklin (Adjunct)	M.S. in Statistics, M.B.A., M.S. in Applied Mathematics, B.A. in Liberal Arts
PH-201 General Physics I	3	Bini Lizbeth Georg (Adjunct Faculty)	PH.D. Physics, M.Phil. in Physics, M.Sc. in Physics, B.Sc. in Physics
HU-331 Arts and Ideas	3	Alhawsali, Abdulrahman (Adjunct Faculty)	Ed.D. in Educarion, M.S. in Education, B.S. Education
SS-351 Ethics	3		
Social Science Elective	3		
Humanities Elective	3		
EN-101 English Communications I	3	Megan Miskovish (Adjunct Fcaulty)	MS. Education and B.A. English Langiage and Literature
EN-102 English Communications II	3		

Additional FAA-certified instructors will be engaged to teach hands-on laboratory courses and FAA-approved maintenance training sessions to ensure compliance with aviation industry and regulatory standards.

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

a) Pedagogy that meets the needs of the students

Capitol Technology University employs an Active Learning model to ensure faculty engage students in hands-on, interactive, and problem-solving activities. This approach emphasizes:

- Real-world applications of aviation maintenance concepts

- Simulation-based learning for troubleshooting aircraft systems
- Industry-standard methodologies in aviation maintenance training

Faculty participate in periodic workshops and training sessions focused on:

- Student-centered learning strategies
- Problem-based learning approaches
- Use of technology in aviation maintenance training
- Adapting instructional methods to various learning styles

These training sessions are conducted in-person and online, ensuring all faculty members, including adjuncts, have access to professional development opportunities.

b) The learning management system (LMS)

The University utilizes Canvas as its Learning Management System (LMS). Faculty are provided comprehensive training on:

- Uploading and managing course content
- Utilizing assessment tools and tracking student progress
- Engaging students in discussions and collaborative projects
- Providing effective feedback through the LMS

New faculty members receive formal LMS training, and ongoing technical support is available through the Department of Online Learning and IT Help Desk.

c) Evidence-based best practices for distance education, if distance education is offered

For faculty teaching hybrid or online courses, the University provides training in Keller's ARCS Motivational Model, which focuses on:

- Engaging students in online learning
- Enhancing course interactivity
- Improving student retention and satisfaction

Faculty receive training on effective online teaching strategies, including:

- Use of virtual labs and simulations for aviation maintenance
- Creating interactive and engaging course content
- Using assessment tools to measure student learning outcomes

All training sessions are recorded and archived, allowing faculty to revisit best practices as needed.

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

Capitol Technology University provides comprehensive library resources to support the B.S. in Aviation Maintenance and Management program. The Puente Library, the university's primary library, offers physical and digital collections, research databases, and interlibrary loan services to ensure students and faculty have access to essential academic materials.

Library Resources Available:

- Aviation and Engineering Databases: The library subscribes to major databases such as IEEE Xplore, ScienceDirect, ProQuest Aviation Collection, and EBSCOhost, providing access to peer-reviewed journals, technical reports, and conference proceedings related to aviation maintenance and management.
- E-books and Online Journals: Students have access to thousands of aviation-related e-books and scholarly journals covering aircraft maintenance, regulatory compliance, airframe systems, and aviation safety.
- FAA and Industry Publications: The library maintains a collection of Federal Aviation Administration (FAA) handbooks, manuals, and industry standards to support coursework and research in aviation maintenance.
- Interlibrary Loan Services: Through partnerships with Maryland Digital Library (MDL) and other academic institutions, students and faculty can request additional resources that are not readily available in the Puente Library's collection.
- Research Assistance and Instruction: The library provides one-on-one research consultations, workshops, and online research guides tailored to aviation and engineering students.

Measures to Ensure Adequate Support:

- The university will conduct annual reviews of library holdings to ensure resources remain current and aligned with industry advancements.
- Additional textbooks, case studies, and technical manuals related to aviation maintenance management, aircraft systems, and safety protocols will be procured as needed.
- Library staff will collaborate with aviation faculty to identify key academic and industry resources that enhance student learning and research.
- The university will expand access to online aviation and management databases, ensuring remote learners and on-campus students have equal access to critical materials.

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 instructional 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.

The B.S. in Aviation Maintenance and Management program will be implemented using the existing physical facilities, infrastructure, and instructional equipment available at Capitol Technology University. The University is well-equipped to support the program with classroom spaces, dedicated faculty offices, laboratories, and specialized equipment required for aviation maintenance education.

Instructional Facilities:

- Classrooms: Capitol Technology University has modern lecture halls and smart classrooms equipped with audiovisual systems, simulation tools, and digital resources necessary for the theoretical components of the program.
- Faculty and Staff Offices: Adequate office space is available for faculty and staff supporting the program, ensuring effective student advising, faculty collaboration, and administrative support.
- Laboratories: Aviation maintenance students will have access to engineering and technology labs that provide hands-on learning opportunities in electronics, digital systems, and mechanical systems.

Aviation Maintenance-Specific Resources:

- Aircraft Systems and Maintenance Lab: This lab will provide students with practical exposure to aircraft components, troubleshooting methods, and repair techniques.
- Simulation and Training Tools: The program will integrate FAA-certified training software and virtual reality (VR) simulations to replicate real-world aviation maintenance scenarios.
- Hands-on Training Facilities: Capitol Technology University is exploring partnerships with aviation maintenance providers and airport facilities to provide students with access to real aircraft and maintenance environments.

Existing institutional resources are sufficient to launch the program, and no additional physical expansions are required at this time. The University President has confirmed that the current infrastructure and resources will meet the program's needs.

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 ensures that all students and faculty have access to a dedicated institutional electronic mailing system. This capability is available across all learning modalities, including in-person, hybrid, and online courses.

- Institutional Email Access: Every student and faculty member is assigned a university email address (e.g., xxxxxxx@captechu.edu).
- Microsoft Office 365 Integration: The University utilizes Microsoft Outlook to provide secure, cloud-based email communication, calendaring, and collaboration tools.
- Mandatory Use for Official Communication: Students and faculty are required to use institutional email for all official academic and administrative communications.

These measures ensure that students and faculty in the Aviation Maintenance and Management program can effectively communicate and access university resources regardless of their physical location.

b. A Learning Management System that Provides the Necessary Technological Support for Distance Education

Capitol Technology University provides a robust Learning Management System (LMS) through Canvas (www.canvaslms.com), ensuring seamless online and hybrid course delivery for the Aviation Maintenance and Management program.

Canvas LMS Capabilities:

Canvas is a cloud-based, user-friendly LMS that provides students and faculty with an intuitive, mobile-friendly platform for coursework, collaboration, and assessment. The system includes:

- Course Management Tools:
  - Centralized access to course materials, lectures, assignments, and quizzes.
  - Secure grade tracking and academic progress monitoring.
  - Integrated discussion boards for student engagement.
- Interactive Learning Features:
  - Real-time web conferencing and virtual classrooms through Zoom integration.
  - Multimedia tools for submitting assignments, presentations, and feedback.
  - Simulation-based training modules for aviation maintenance procedures.
- Mobile and Cloud-Based Accessibility:
  - Students and faculty can access Canvas on any device (laptop, tablet, mobile phone).
  - Offline access enables students to download materials and continue coursework without an internet connection.
- Analytics and Assessment Tools:
  - Performance tracking and reporting to identify areas where students need additional support.
  - Automated grading and feedback systems for efficiency.

Integration with Aviation Maintenance Training

The Canvas LMS will be customized to integrate FAA-certified aviation maintenance training modules, virtual labs, and technical manuals, ensuring students receive high-quality distance learning that meets industry standards.

Capitol Technology University has been using Canvas for over five years, and it has proven to be a reliable and effective platform for distance education and blended learning. The LMS fully supports the rigorous academic and technical requirements of the Aviation Maintenance and Management program, ensuring that students receive a comprehensive, interactive, and career-ready education.

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 entered below. Figures are presented for five years and totaled by category for each year.

TABLE 1: RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	$0	$0	$0	$0	$0
2. Tuition/Fee Revenue (c + g below)	$445,355	$1,068,083	$1,530,659	$2,266,955	$2,600,475
a. Number of F/T Students	13	31	43	61	69
b. Annual Tuition/Fee Rate	$26,003	$26,393	$26,789	$27,191	$27,871
c. Total F/T Revenue (a x b)	$338,039	$818,183	$1,151,927	$1,658,651	$1,923,099
d. Number of P/T Students	11	25	37	58	63
e. Credit Hour Rate	$813	$833	$853	$874	$896
f. Annual Credit Hour	12	12	12	12	12
g. Total P/T Revenue (d x e x f)	$107,316	$249,900	$378,732	$608,304	$677,376
3. Grants, Contracts, and Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	$445,355	$1,068,083	$1,530,659	$2,266,955	$2,600,475

This proposal builds upon an existing degree program.

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
The University will not need to reallocate funds for the program.

2. Tuition and Fee Revenue
Tuition is calculated to include an annual 2.5% tuition increase. A 20% attrition rate has been factored into the calculations.

3. Grants and Contracts
At this time, there are no grants or contracts supporting the program.

4. Other Sources
Currently, there are no additional sources of funding for the program.

5. Total Year
No additional explanation or comments are needed.

2. Table 2: Program Expenditures

Finance data for the first five years of program implementation are provided below.

TABLE 2: EXPENDITURES

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	$32,670	$58,960	$69,067	$106,193	$145,133
a. Number of FTE	2	3.5	4	6	8
b. Total Salary	$27,392	$49,133	$57,556	$88,494	$120,944
c. Total Benefits (20% of salaries)	$5,278	$9,827	$11,511	$17,699	$24,189
2. Admin Staff (b + c below)	$4,798	$5,090	$5,243	$5,374	$5,508
a. Number of FTE	0.07	0.07	0.07	0.07	0.07
b. Total Salary	$4,084	$4,207	$4,333	$4,441	$4,552
c. Total Benefits	$858	$883	$910	$933	$956
3. Support Staff (b + c below)	$57,475	$88,369	$114,950	$120,770	$185,676
a. Number of FTE	1.00	1.5	1.75	2	3
b. Total Salary	$47,500	$73,032	$83,125	$99,810	$153,450
c. Total Benefits	$9,975	$15,337	$16,625	$20,960	$32,226
4. Technical Support and Equipment	$1,440	$3,640	$5,600	$8,925	$10,560
5. Library	$0	$0	$0	$0	$0
6. New or Renovated Space	$0	$0	$0	$0	$0
7. Other Expenses	$43,848	$105,392	$155,040	$237,524	$271,392
TOTAL (ADD 1-7)	$140,231	$261,451	$349,900	$478,786	$618,269

1. 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.

a. Faculty

Table 2 reflects faculty hours in total, but this does not necessarily imply new hires are required. The faculty effort required will be covered by a combination of existing and adjunct faculty as needed.

b. Administrative Staff

The existing administrative staff at Capitol Technology University will support the program, and no new administrative hires are needed at this time.

c. Support Staff

The University plans to increase support staff as student enrollment grows. Support staff will facilitate program administration, student advising, and laboratory management.

d. Equipment

- Software licenses for aviation maintenance training will be procured as needed.
- Additional licenses for the Learning Management System (LMS) will be purchased at a rate of $60 per student in Year 1, increasing by $5 per year.
- The University may invest in maintenance simulation tools to enhance the hands-on learning experience.

e. Library

The University's current digital and physical library resources adequately support the program. No additional funds have been allocated at this time, but updates to the library collection will be reviewed annually.

f. New or Renovated Space

No new or renovated space is required. The University's existing classrooms, labs, and infrastructure are sufficient for the Aviation Maintenance and Management program.

g. Other Expenses

- Funds have been allocated for office materials, travel, faculty professional development, course development, marketing, and additional student scholarships.
- Marketing and outreach efforts will focus on increasing awareness and attracting students to the program.

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 Capitol Technology University consists of a series of structured evaluation events throughout the academic year. The University Assessment Team collects and stores assessment results within the Canvas Learning Management System (LMS) for analysis and use in annual reports, accreditation reviews, and curriculum improvements. The Assessment Team reviews results, develops action plans, and monitors implementation to ensure continuous improvement of the Aviation Maintenance and Management program.

Academic Year Assessment Events:

Fall Semester:

- At the August Faculty Retreat, faculty review student learning challenges and propose solutions. These concerns are escalated to the Academic Deans for review and action planning.
- Faculty submit performance plans aligned with the University's mission and goals. These are reviewed and approved by the Academic Deans.
- Department Chairs and Academic Deans evaluate the Graduating Student Survey data to assess student satisfaction and program effectiveness.
- The Academic Deans review internship evaluations from students engaged in aviation maintenance training programs.
- Grade distribution reports from the spring and summer semesters are analyzed to identify academic performance trends.
- Course evaluations from the summer semester are reviewed for instructional improvements.
- Industrial Advisory Board meetings are conducted to review curriculum updates and industry recommendations.

Note: A full curriculum review occurs every two years. Minor changes require Academic Dean approval, while major changes require Executive Council approval.

- Student Town Hall meetings provide feedback for curriculum adjustments.
- Employer interviews at Career Fairs help assess employer expectations for aviation maintenance graduates.
- Post-residency reviews are conducted to monitor student progress and adjust instructional strategies.

Spring Semester:

- Faculty Performance Plans are reviewed and adjusted as necessary.
- Grade distribution reports from the fall semester are analyzed for student achievement trends.
- Graduating Student Survey data is evaluated for student learning outcomes.
- Course evaluations from the fall and spring semesters are analyzed before the summer session begins.
- Department Chairs and Academic Deans assess the content of student, alumni, and employer surveys to refine evaluation tools.
- The Annual Faculty Summit in May is used to review learning challenges and create implementation plans for improvement.
- Employer interviews at Career Fairs provide industry feedback.
- Industrial Advisory Board meetings continue refining curriculum and training methodologies.

In addition to formal summative assessments, the Academic Deans and Department Chairs meet weekly to discuss student progress, faculty concerns, and instructional improvements.

The Faculty Senate, which meets monthly from August through April, discusses issues affecting student outcomes. It provides recommendations to Academic Deans, who determine whether to adjust curricula, teaching methods, or faculty resources.

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:

The B.S. in Aviation Maintenance and Management program will assess student learning using:

- Capstone projects, competency exams, and hands-on training assessments to measure technical proficiency.
- Industry-aligned assessment rubrics developed in accordance with Federal Aviation Administration (FAA) standards for aviation maintenance programs.
- Accreditation requirements from the Middle States Commission on Higher Education (MSCHE), ensuring compliance with Standard V: Educational Effectiveness Assessment.

The program will also integrate FAA Airman Certification Standards (ACS) and Federal Aviation Regulations (FAR) Part 147 guidelines, which define the competencies required for Aircraft Maintenance Technicians (AMTs).

Capitol Technology University is committed to maintaining compliance with MSCHE accreditation and will integrate FAA regulations and industry standards to ensure students gain FAA certifications as part of the degree program.

Student Retention:

The University maintains a student retention framework under the Vice President for Student Engagement to support student success at all levels:

- Canvas Drop-Out Detective System: The University's LMS provides an early alert system to identify at-risk students.
- Academic Advisors proactively contact students showing signs of academic struggles and develop intervention plans.
- Each student is required to meet with their advisor each semester to review academic progress and career pathways.
- The Vice President for Student Engagement and Academic Deans hold regular meetings to identify and address retention issues.
- Student feedback mechanisms, including one-on-one advising, surveys, and faculty mentorship, ensure students receive ongoing academic and career support.

Student and Faculty Satisfaction:

- Students complete online course evaluations at the end of each semester, which is required to maintain LMS access.
- Faculty conduct self-reviews each semester to ensure continuous improvement.
- Department Chairs and Academic Deans analyze faculty and student evaluations to make adjustments as needed.
- Curriculum and teaching adjustments are implemented based on evaluation results.
- If significant changes are needed, they are reviewed through Academic Dean oversight before Executive Council approval.

Evaluation Cycle:

1. Faculty submit course reflections and improvement plans.
2. Department Chairs and Academic Deans review faculty performance evaluations.
3. Student course evaluations are analyzed for improvement recommendations.
4. A follow-up evaluation in the next semester determines the impact of curriculum changes.

This continuous assessment cycle ensures ongoing instructional improvement and student satisfaction.

Cost-Effectiveness:

- Annual Budget Review: The Academic Deans prepare an academic budget based on student learning needs, enrollment growth, and faculty recommendations.
- Funding Justification: Budget increases are aligned with student success initiatives, such as improving hands-on labs, technical training software, and faculty development.
- Interim Vice President of Finance and Administration monitors the program's financial sustainability.

- Executive Council and Board of Trustees review financial performance annually to ensure cost efficiency.

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 institution that embraces diversity, equity, and inclusion across all academic programs. The University is committed to increasing access and success for underrepresented minority students, particularly in STEM-related fields, including aviation maintenance and management.

The B.S. in Aviation Maintenance and Management will actively recruit minority students, including African American, Hispanic, and female students, to increase diversity within the aviation maintenance workforce, an industry that has traditionally lacked minority representation.

The University's recruitment initiatives include:

- Targeted outreach programs at Historically Black Colleges and Universities (HBCUs) and minority-serving institutions.
- Partnerships with local high schools to introduce students from underrepresented communities to aviation career pathways.
- Scholarships and financial aid opportunities for minority and economically disadvantaged students pursuing careers in aviation maintenance and management.
- Collaboration with aviation industry leaders to provide internships and mentorship opportunities for minority students.

Capitol Technology University also prioritizes cultural diversity initiatives, ensuring that the Aviation Maintenance and Management program fosters an inclusive learning environment by:

- Incorporating diverse perspectives and case studies in aviation coursework.
- Providing academic and career support tailored to minority student success.
- Promoting networking opportunities with minority professionals in aviation through industry partnerships and professional organizations.

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 any low productivity programs identified by the Commission. The Aviation Maintenance and Management program is designed to address a growing industry demand for highly skilled aviation professionals and aligns with Capitol Technology University's strategic initiatives for expanding workforce-driven degree programs.

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 delivering high-quality online education. The institution is regionally accredited by the Middle States Commission on Higher Education (MSCHE) and holds specialized accreditations through the International Accreditation Council of Business Education (IACBE), the Accreditation Board for Engineering and Technology (ABET), as well as affiliations with NSA and DHS. Each of these accrediting organizations has reviewed and approved Capitol Technology University's distance education programs as part of their accreditation processes. The University is in good standing with all of 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 well-established record of providing high-quality distance education that complies with the Council of Regional Accrediting Commissions (C-RAC) Interregional Guidelines for the Evaluation of Distance Education. The University will continue to adhere to these guidelines for the proposed B.S. in Aviation Maintenance and Management 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 aligns with Capitol Technology University's mission, purpose, and institutional 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—including online, hybrid, and on-campus programs—are subject to the same planning, assessment, and evaluation processes. Please refer to Section M for a detailed process description.

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

Online programs are integrated into the same governance structures and academic oversight processes as traditional programs. Please see Sections G and M for details.

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 courses meet the same accreditation standards, educational goals, learning objectives, and student outcomes as traditional classroom-based instruction. Capitol Technology University follows Quality Matters (QM) research-based standards for course development, ensuring the academic rigor of online courses is comparable to in-person courses. The curriculum undergoes annual review by Academic Deans, Department Chairs, and faculty, as well as Industry Advisory Boards, to ensure compliance with industry and academic standards.

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

Online courses and programs undergo the same evaluation and accreditation review as in-person programs. The University's Academic Deans and faculty conduct continuous assessments of online courses to ensure:

- Course content aligns with program goals and industry standards.
- Students meet expected learning outcomes through structured assessments.
- Instructional technology supports the academic rigor of the program.

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 Aviation, which houses the proposed B.S. in Aviation Maintenance and Management, is staffed by qualified faculty members who have extensive industry experience and academic credentials.

Faculty for online courses receive specialized training in online instruction. The University provides:

- Workshops and training seminars for faculty on best practices in online instruction.
- Mentorship programs for new online instructors.
- Regular reviews of faculty performance and student feedback.

The same faculty who teach on campus also teach online courses, ensuring continuity and consistency in instruction. Please refer to Section I for faculty qualifications.

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

Students enrolled in online courses at Capitol Technology University have access to comprehensive academic and support services, including:

- 24/7 technical support for online learning platforms.

- Live and pre-recorded tutorials on navigating online coursework.
- Virtual tutoring services, offering one-on-one support via Zoom and other platforms.
- Library resources, including digital research databases and electronic journals.
- Dedicated faculty office hours, available virtually.

The University's Learning Management System (Canvas) provides a structured platform where students can interact with faculty, participate in discussions, submit assignments, and access course materials.

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

The University is committed to investing in online education and has allocated financial and technological resources to ensure continued success in distance education. Please refer to Section L for financial details.

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

To maintain the academic integrity of online courses, Capitol Technology University follows strict evaluation processes:

- Internal advisory boards review program content and recommend updates as needed.
- Faculty selection follows rigorous hiring criteria, with a focus on subject-matter expertise and online teaching experience.
- The University's Human Resources Department ensures faculty qualifications align with program needs.
- The Director of Online Learning provides faculty development programs and resources for online course delivery best practices.

The University's Learning Management System (Canvas) is equipped with:

- Student authentication measures to verify student identity.
- Plagiarism detection tools to ensure academic honesty.
- Secure proctoring solutions for online assessments.

Faculty continuously monitor student progress and provide timely feedback, ensuring online students receive the same level of academic engagement and support as on-campus students.

Additionally, all distance education programs undergo an annual assessment and accreditation review by the Middle States Commission on Higher Education (MSCHE). The results of these evaluations are publicly documented and reported to University leadership.