Office Use Only: PP#

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

Institution Submitting Proposal	Embry-Riddle Aeronautical 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 # 4009872
Payment Amount: $6,800
Date Submitted: 09/06/23

Department Proposing Program	College of Aviation		
Degree Level and Degree Type	Bachelor of Science		
Title of Proposed Program	B.S. in Uncrewed and Autonomous Systems		
Total Number of Credits	120		
Suggested Codes	HEGIS:	CIP: 36.0207	
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: 2024
Provide Link to Most Recent Academic Catalog	URL: https://catalog.erau.edu/worldwide/aviation/bachelors/uncrewed-autonomous-systems/		
Preferred Contact for this Proposal	Name: Nicole Wallace		
	Title: Associate Director, State Authorizations		
	Phone: (386) 481-9096		
	Email: wwstateauth@erau.edu		
President/Chief Executive	Type Name: John R. Watret, Ph.D.		
	Signature: [signature]	Date: 9/8/23	
	Date of Approval/Endorsement by Governing Board:		

Revised 1/2021

MARYLAND HIGHER EDUCATION COMMISSION

Application for New Academic Programs for Out-of-State Degree-Granting Institutions that Operate in Maryland

This questionnaire, properly completed with supporting documentation, shall serve as an application for approval for new academic programs for Out-of-State Degree-Granting Institutions under extended operational approval that operate in Maryland under the Code of Maryland Regulations (COMAR) 13B.02.01.06

Out-of-State Degree-Granting Institutions that are not under extended operational approval can add additional programs using the Out-of-State Renewal Application, as per COMAR 13B.02.01.08, which can be found on the MHEC website.

[If these programs/classes are to be offered at a military installation and the recruitment and enrollment of students is limited to active duty personnel, their dependents, or civilians employed at the installation, and if the institution waives its right to claim veterans' benefits for enrolled students, do not complete this application. Complete an Application for Exemption to ~~COMAR~~ 13B.02.01 instead.]

Please Note: A separate application form must be completed and submitted with all supporting documentation for each proposed location in Maryland.

PROPOSED START DATE. 02/01/2024
Applications should be submitted at least 5 months prior to the proposed start date.

INSITUTION APPLYING FOR APPROVAL.	
Name of Institution: Embry-Riddle Aeronautical University	
Web Address: www.erau.edu	
OPEID Code: 001479 **U.S. Department of Education, Office of Postsecondary Education, ID Code -- Title IV eligibility.**	
Chief Executives Officer: John R. Watret, Ph.D.	
Mailing Address: 1 Aerospace Boulevard, Daytona Beach, FL 32114-3900	
Telephone: 386-481-9096	**Email: wwstateauth@erau.edu**

Institutional Liaison: Name and title of the individual who will serve as liaison to the Maryland Higher Education Commission:	
Name: Nicole Wallace	
Title: Associate Director, State Authorizations	
Mailing Address: 1 Aerospace Boulevard, Daytona Beach, FL 32114-3900	
Telephone: 386-481-9096	**Email: wwstateauth@erau.edu**

********** **CERTIFICATION** **********

I hereby affirm that the answers given in this application and its attachments are accurate and complete and further agree to comply with the *Annotated Code of Maryland* and State regulations governing the operation of out-of-State degree-granting institutions (COMAR 13B.02.01).

9/8/23
Date

Signature of Chief Executive Officer

Electronic applications are preferred for applications. You can send your application to oosauthorization.mhec@maryland.gov

All payments should be mailed to:
Maryland Higher Education Commission
Director of Academic Affairs
6 N. Liberty St., 10th Floor
Baltimore, Maryland 21201

A copy of these regulations can be found on the Maryland Higher Education Commission's web site www.mhec.state.md.us

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I. SUPPORTING DOCUMENTATION.

Only a complete application can be acted upon. While separate application forms must be completed and submitted for each proposed location, the following Supporting Documentation needs to be included only once for the entire package of applications. **CHECK EACH ITEM AS ATTACHED.**

☒ Cover letter from the chief academic officer addressed to the Secretary of Higher Education requesting the approval of the new program.

☒ Out-of-State New Program and Sub Mod Cover Sheet with all required signatures.

☒ Program Review Fees COMAR 13B.02.03.02-1

A. Except as provided in §C of this regulation, each institution of higher education shall pay an academic program review fee for each program review action as provided in this regulation.

B. The following schedule sets forth the fees for academic program review actions.

Click here for the Schedule

II. APPLICATION QUESTIONAIRE

This questionnaire, properly completed with supporting documentation, shall serve as an application for approval for new academic programs for Out-of-State Degree-Granting Institutions that operate in Maryland under the Code of Maryland Regulations (COMAR) 13B.02.01.06

Please note: a separate application form must be completed and submitted with all supporting documentation for each proposed location in Maryland.

A/B. The institution shall present evidence demonstrating the educational need to establish operations, offer programs, and award the degrees in question in the State pursuant to COMAR 13B.02.01.06

(1) **The degree to be awarded;**

Bachelor of Science in Uncrewed and Autonomous Systems (CIP Code: 36.0207)

(2) **The area of specialization;**

Uncrewed and Autonomous Systems (18 credits core courses)

(3) **The purpose or objective of the program or course of study to be offered;**

The objective of the bachelor's degree program in Uncrewed and Autonomous Systems is to prepare students for administration, operations, and development work with uncrewed aircraft systems (UAS) and small-uncrewed aircraft systems across a wide range of industries. Putting an emphasis on the air domain, the program also covers uncrewed and robotic systems in the space, ground, and maritime domains.

With continually updated curriculum focused on the evolution of drones and robotics, students will learn how uncrewed systems are being deployed – and that we have only just begun to explore the full potential of the technology.

Students examine major challenges, such as interoperability, autonomy and robotics, airspace integration, communications, education and training, propulsion and power, teaming, and regulation.

Courses in this program are designed so that upon completion, students will have achieved the following **academic outcomes**:

- Apply knowledge at the synthesis level to define a program that solves problems within professional and personal environments.
- Demonstrate the use of digitally enabled technology, including concepts, techniques, and tools of computing; mathematics proficiency; and analysis techniques to interpret data for the purpose of drawing conclusions and solving associated problems.
- Conduct appropriate research, including gathering information from primary and secondary sources and incorporating and documenting source material in their writing.
- Communicate concepts in written, digital, and oral forms to present technical and non-technical information.
- Analyze scientific evidence as it relates to the physical world and its interrelationship with human values and interests.

- Analyze historical events, cultural artifacts, and philosophical concepts that are relevant to their selected field of study or influential to the development of humanity.
- Develop skills needed to enrich the quality of life through activities that enhance and promote lifelong learning.
- Apply the fundamentals of uncrewed systems, including the technological, economical, legal, social, political, and environmental aspects of uncrewed systems operations.
- Evaluate and suggest appropriate uncrewed systems elements, configurations, and operational criteria supporting different applications within various environments through analysis and comparison.
- Identify and apply performance criteria to solve basic operational problems such as task-oriented asset, payload selection, and distinction of acquisition or design criteria.
- Demonstrate appropriate selection and application of research to support program objectives and solving of identified problems specific to their course subject matter.
- Analyze a variety of managerial aspects and examine how they apply to different uncrewed and autonomous systems. The comprehension of administrative functions within organizations and relations between entities will enable students to apply management concepts to selected uncrewed systems topics.
- Analyze different task requirements under varying operational circumstances to select appropriate solutions during mission planning and execution. The comprehension of systems capabilities and limitations will enable students to support successful employment of the craft, its sensors, and/or its payload.
- Apply engineering knowledge and skills towards the design, development, and validation of uncrewed systems applications. The comprehension of operational, engineering and design, and test requirements will enable students to support development efforts in uncrewed and autonomous systems.

(4) **Specific academic content of the program or course of study;**

GENERAL EDUCATION

Communication Theory and Skills	
Any Communication Theory and Skills courses above ENGL 106	9 credits
Humanities	
Humanities elective (lower or upper level)	3 credits
Humanities elective (upper level)	3 credits
Social Sciences	
Any Social Science courses	6 credits
Physical and Life Science	
Any Physical Science/Physics .	6 credits
Mathematics	
Any College Algebra or higher math series	6 credits
Computer Science	
Any Computer Science	3 credits

Total Credits -- General Education 36 credits

PROGRAM CORE

ASCI 309 Aerodynamics 3 credits
Students are provided with an opportunity to explore incompressible flow airfoil theory and wing theory. Topics center on calculation of stall speed, drag and basic performance criteria, configuration changes, high and low speed conditions, special flight conditions, and an introduction to compressible flow.

UNSY 315 Uncrewed Aircraft Systems and Operations 3 credits
Uncrewed Aircraft Systems (UAS), Uncrewed Aircraft Vehicles (UAV), and their role in the aviation industry and importance in modern commercial and military integration in airspace, air traffic control; development, operations and applications. Structural and mechanical factors, avionics, navigation, flight controls, remote sensing, guidance control, propulsion systems, and logistical support.

UNSY 316 Operational and Business Aspects of Uncrewed Aircraft Systems 3 credits
Differentiate the needs of civil aviation for Uncrewed Aircraft Systems (UAS) addressed within national airspace and aviation regulatory constraints; Implement skill sets and tools used to mitigate restrictions; create flight plan operations that can successfully employ UAS.

UNSY 318 Uncrewed Aircraft Systems Robotics 3 credits
Integrating robotic technology into the hardware and software regimes of uncrewed aviation. Examinations of control and system programming in the context of specific missions through guided discussions, simulation and the operation of actual uncrewed aircraft robotic systems.

UNSY 410 Uncrewed Systems Sensing Technology 3 credits
Fundamental concepts and methods of sensing systems to satisfy task requirements about UAS operating environment including the type, format, and capabilities of sensors; component and system integration; use cases; challenges and issues; and emerging concepts. Tools and methods used to support the development, configuration, and application of sensing systems with complex mission planning assignments and guided discussion.

UNSY 205 Applied Physics for Uncrewed Systems 3 credits
A foundation in physics as required to understand uncrewed systems applications such as sensor technology, communication and control interfaces, electro-technical and electronic application design, construction and implementation. Elementary particle theory, field properties, wave propagation, and optical relationships as required for an understanding of applications within the electromagnetic spectrum to include modulation concepts. Analog and digital electronic circuitry to include signal logic, and electromechanical and electromotive devices to include servo applications.

UNSY 307 Uncrewed Systems Networking 3 credits
Information technology, communications, and frequency spectrum used in conjunction with uncrewed systems around the world. Explore signal processing, communications, interfaces, data links/exchange, FCC regulations, interoperability, and communication standards and protocols associated with robotic systems. Tools and methods used to support development, configuration, and application of uncrewed systems individual and networked operations through communication and information processing of signals and data.

UNSY 311 Uncrewed Ground Systems and Applications 3 credits
Introduction to the fundamental concepts and commonly applied technology used for uncrewed ground systems (UGS). Exposure to a historical perspective, control fundamentals, control systems, mobility methods, sensor systems, and applications such as agriculture, search and rescue, firefighting, construction, mining, and others. Tools and methods supporting the development, configuration, and application of UGS to conduct operations of appropriate vehicles, sensors, and payloads in terrestrial environments.

UNSY 313 Uncrewed Maritime Systems and Applications 3 credits
Fundamental concepts and commonly applied technology used for uncrewed maritime systems (UMS); historical perspective, control fundamentals, control systems, surface and underwater methods, sensor systems, and applications such as search and locate, inspection, construction, and others. Overview of tools and methods used to

support development, configuration, and application of UMS to conduct operations of appropriate vehicles, sensors, and payloads in marine environments.

UNSY 319 Cybersecurity and Countermeasure Considerations 3 credits
Emerging threats and hazards involving cybersecurity aspects of the design and application of uncrewed systems, vulnerabilities within platform components, data links and C3 (Command, Control and Communication); jamming, spoofing, hacking, intentional electromagnetic interference. Tools and methods used to protect and encrypt platform components and data links; small UAS risk and threat assessment and countermeasures.

UNSY 331 Uncrewed Systems Legal and Regulatory Compliance 3 credits
Current legal frameworks and domain-specific rules (air, space, maritime, and ground); compliance enforcement; challenges and issues; case examples; processes for change; intellectual property and design; and emerging concepts. Laws, regulations, and policies relating to the development, configuration, and application of command, control, and communication (C3), autonomous operation, and the capture and review of sensor data.

UNSY 405 Uncrewed Systems Operational Environments and Conditions 3 credits
Environmental issues and conditions affecting performance, mission purpose, design and appropriateness of platform and associated components; extreme temperature, terrain, weather, pressure, range, and required endurance. Analyze considerations relating to the development, configuration, and application of correctly identified robotic solutions based on problem sets, environments, conditions, and operational types.

UNSY 415 Uncrewed Space Systems and Application 3 credits
Fundamentals and commonly applied technology for uncrewed space systems, historical perspectives, current developments, and possible future concepts. Uncrewed space system specific considerations of craft design requirements, maneuvering fundamentals and control systems, and payload selection; space navigation and orbital maneuvering; operational domains (air, space, ground, and maritime), exploration of extraterrestrial celestial bodies, such as planets, moons, comets, and asteroids.

UNSY 431 Uncrewed Systems Human Factors Considerations 3 credits
Human factors concepts and implications affecting the development, configuration, and application of uncrewed systems; types and functions of human-machine-interfaces (HMI)s; human behavior, capabilities, and limitations; psychological and perceptual information processing; sensation, cognition, and ergonomics; and effects of autonomy. Considerations relating to the development, configuration, and application of HMIs used for command, control, and communication (C3), autonomous operation, and the review and manipulation of sensor data.

UNSY 491 Operational Applications in Uncrewed Systems 3 credits
Culminating experience for students in the Uncrewed Systems Applications degree program. Industry growth, innovative development, and effective use of uncrewed system technology across the respective domains (air, space, ground, and maritime); major challenges within the industry including interoperability, autonomy, airspace integration, communications, education and training, propulsion and power, teaming, and regulation.

STAT 211 Statistics with Aviation Applications 3 credits
This course is a study of basic descriptive and inferential statistics. Topics include types of data, sampling techniques, measures of central tendency and dispersion, elementary probability, discrete and continuous probability distributions, sampling distributions, hypothesis testing, confidence intervals, and simple linear regression.

Total Credits -- Program Core 48 credits

SPECIFIED ELECTIVES

Six courses from the following options (3 credits each):

PMGT 325 Concepts and Practices of Project Management
This course provides undergraduate students, who are not enrolled in a project management degree program, an appreciation for the depth and breadth of the project management profession. The course will address the complete project lifecycle including initiating, planning, executing, monitoring and controlling and closing. Emphasis will be placed on gaining a knowledge of common terminology, principles, techniques and tools that are found global standards for project management.

COMD 322 Aviation and Aerospace Communication
This course introduces the practices of communicating news and issues in aviation and aerospace to a variety of publics through magazine-style writing and public speaking. Students will learn how to recognize the news value of contemporary aviation issues, to gain an understanding of those issues through research and interviews with experts, and to write about and discuss the issues. Coursework also includes readings from respected aviation writers that illustrate aviation's economic and social impact on society. Special topics include safety, airport security and congestion, emerging legal issues, and international aviation trends.

COMD 460 Crisis Communication
Mastery of writing and speaking genres in media relations with an emphasis on crisis communication.

BUSW 352 Business Quantitative Methods
Development, implementation, and utilization of business models for managerial decision-making. Various techniques for modeling, such as statistical analyses techniques, data analysis, regression and correlation analysis, forecasting, simulation, and optimization models, are covered. Developing models needed in decision support systems using Microsoft Excel.

MGMT 408 Airport Management
Management and operation of the commercial service airports in the United States, emphasis on airport system facilities including landside, airside and airspace; rules and regulations governing airport operations, funding programs, airport security policies economic, political, environmental, and social role of airports.

MKTG 450 Aviation/Airport Management
Marketing in the airline/airport industries. Consumer segmentation, integrated marketing communications and social media for customer targeting and service delivery. Channel structure and ancillary revenue generation. Route development and non-aeronautical revenues.

EMGY 405 Disaster Policy and Management
Disaster Policy & Management introduces principles of disaster management, the understanding of disaster policy, and the global organization of disaster and crisis public management. This course focuses on disaster management in the United States and its relationship between disaster management and public management; through case studies and other activities students will gain a thorough understanding of national disaster policy and crisis management at all levels of government.

EMGY 310 Fundamentals of Emergency Management
This course studies the various elements involved with all phases of emergency management. It includes thorough coverage of the historical background of emergency management (EM) in the United States as viewed through several significant disaster events and the emergence of the most significant laws and policies. These policies have defined and continue to shape the management of emergencies through local, state and federal levels of government, including: HSPD 5, HSPD 8, the Stafford Act, the National Flood Insurance Act, along with other pre-FEMA and post-9/11 legislative actions. Topics include a survey and analysis of natural and technological hazards; detailed coverage of FEMA's all hazards approach; all phases of EM cycle - mitigation, preparation, response and recovery; integrated emergency management systems; the incident command and the National Incident Management Systems, and Emergency Support Functions; risk assessment factors; and traditional and social media communications. The course culminates in a group project with each student writing and formally presenting an integrated emergency management plan (EMP).

ESVS 403 Disaster Planning and Control
This course examines concepts and principles of community risk assessment, planning, and response to fires and

natural and human-caused disasters, including National Incident Management System--Incident Command Systems (NIMS ICS), mutual aid and automatic response, training and preparedness, communications, civil disturbances, terrorist threats/incidents, hazardous materials planning, mass casualty incidents, earthquake preparedness, and disaster mitigation and recovery.

HLSD 315 Critical Infrastructure Security, Resilience, and Risk Analysis
Critical infrastructure security, resilience, and risk analysis. History and evolution of critical infrastructure on both public and private levels. Federal definitions, sector identification, composition and characteristics of critical infrastructure, as expressed in formal documents (Stafford Act, PDD-63; HSPD-7, PPD-21) and within the private sector. The public-private partnership approach between infrastructure sectors, and sector-specific plans, critical infrastructure in a global context. Definition and role of resilience in critical infrastructure planning and disaster mitigation, response, and recovery. Complete a project involving an in-depth review and presentation of a critical infrastructure sector. Additionally, the concept of risk analysis as a means by which resources and assets are allocated to critical infrastructure(s). Complete a group project utilizing a qualitative risk assessment methodology. Risk fundamentals, network theory, continuity of business planning, and cost-benefit analysis. A formal risk analysis report will be completed at the conclusion of the project and an oral presentation will be delivered. Role of risk in the overall mission of the Department of Homeland Security, to include the National Infrastructure Protection Plan (NIPP). Successful completion of a FEMA on-line certification on the NIPP.

WEAX 364 Weather for Aircrews
Making use of the Weather Center and the Internet, students collect and study weather data from around the world. Emphasis is placed on decoding information contained in the remarks section of weather observations and on the differences between North American weather charts and those produced in other parts of the world. Students investigate the flying conditions and aviation environment over the seven continents. The proper operation of airborne weather radar is studied. Students identify weather hazards by using ground-based weather radar and satellite imagery.

ASCI 301 Introduction to Air Traffic Control
This course is designed to introduce the student to the operating environment of air traffic control. An overview of major governing authorities including the Federal Aviation Administration, the International Civil Aviation Organization, the Civil Aviation Authority of Singapore, Eurocontrol, and Brazil's Department of Airspace Control along with other controlling agencies will be covered, including the mission, organization and operations, regulations, publications, manuals, maps, charts, and regulations used by pilots and air traffic controllers. ATC procedures, and future air traffic control systems are also discussed. This course provides students with a fundamental knowledge of the air traffic control systems and traffic management principles.

ASCI 403 Air Traffic Management
The course introduces the student to traffic flow management definitions, concepts, technologies (current and planned for future air traffic systems and operations, and applications required to perform system analysis of the constraints and their impact on efficiency of traffic flows within the air traffic airspace. Management concepts related to technology, collaboration, and innovation in Air Traffic Control (ATC) and Air Traffic Management (ATM) will also be covered. Topics covered include Global Air Navigation Plan (GANP), governance restrictions, regulatory capabilities, ATM systems, sustainable infrastructure, and environmental impacts. The implications on managers of ongoing air navigation improvement programs of International Civil Aviation Organization (ICAO) Member States (SESAR in Europe; NextGen in the United States; CARATS in Japan; SIRIUS in Brazil, and others in Canada, China, India, Asia, Pacific, Africa and The Russian Federation) are also introduced.

UNSY 325 Uncrewed Systems Testing and Inspection
Fundamental concepts, methods, and tools associated with the testing and inspection of uncrewed systems components, elements, subsystems, and unified designs; types and methods of testing and inspection, including acceptance, compliance, quality assurance and control, reliability, and system/subsystem operational readiness. The rationale and variation among test and inspection types to produce strategies and plans, map requirements, justify recommendations, and document results. Analyze the development, manufacturing, and operational (configuration and application) environments.

UNSY 329 Uncrewed Systems Computation and Programming

Commonly applied uncrewed systems computational technology and an opportunity to apply basic programming concepts, with a focus on methodologies for task-oriented uncrewed systems applications; examination of system processing requirements, appropriate hardware and software design; development of programming solutions to specific uncrewed systems tasks; testing and debugging to optimize uncrewed systems solutions. Tools and methods to support the development, configuration, and application of computational architectures with respect to representative uncrewed systems operations.

UNSY 421 Uncrewed Systems Mission Planning
This course will build on prior uncrewed and autonomous systems localization and path planning coursework and will introduce students to concepts of task and object oriented uncrewed systems employment. Previous navigational knowledge will be applied towards specific mission objectives, incorporating considerations of point/area of interest approach planning; payload selection and employment optimization; inter/intra-system coordination and de-confliction; contingency planning; and mission assessment/evaluation. Attention will be given to application of task and objective definitions; system, sensor, and payload selection/matching; and performance based scenario planning.

Total Credits – Specified Electives 18 credits

MINOR OR OPEN ELECTIVES

Open Electives (18 credits)

OR

Minor Course of Study (18 credits)
(Any minor course of student except Uncrewed Autonomous Systems)

Total Credits – Minor or open electives 18 credits

TOTAL DEGREE REQUIREMENTS 120 CREDITS

(5) **The quality of the proposed program in comparison to existing programs;**

Capitol Technology University, located in Laurel, MD, offers a Bachelor of Science in Unmanned and Autonomous Systems.

The 122-credit program at Capitol Tech is comparable to Embry-Riddle's proposed program, as illustrated in the chart below. Listed on the right column are courses in the Capitol Tech program that are similar to those in the Embry-Riddle program.

The Embry-Riddle program is focused on aerial uncrewed systems, while the Capital Technology University program covers unmanned systems more broadly with a focus on systems design.

Embry-Riddle Aeronautical University – Worldwide Campus offers an opportunity for qualified, highly motivated students to complete the bachelor's program as well as the Master of Science in Uncrewed and Autonomous Systems in five academic years. (4 + 1 program)

ERAU Degree Requirements	**Comparable** Capital Tech Degree Requirements
General Education: 36 hrs.	General Education
Any Communication Theory and Skills above ENGL 106 (9 hours)	EN 101 and EN 102: English Communications I and II (6 hours)
Any Upper & Lower level Humanities (6 hours)	HU 331 or HU 332: Arts and Ideas (3 hours)

Any Social Science (6 hours)	Social Science Elective (3 hours)
Any Physical Science/Physics (6 hours)	PH 201 and PH 202: General Physics I and II
Any College Algebra or Higher Math Series (6 hours)	MA 114: Algebra and Trigonometry (3 hours) MA 124: Discrete Mathematics (3 hours)
Any Computer Science (3 hours)	CS 150: Introduction to Computer Programming Using C (3 hours) CS 220: Database Management (3 hours)
Program Core: 48 hours	
ASCI 309: Aerodynamics (3 hours)	
UNSY 315: Uncrewed Aircraft Systems and Ops (3 hours)	
UNSY 316: Operational and Business Aspects of Uncrewed Aircraft Systems (3 hours)	
UNSY 318: Uncrewed Aircraft Systems Robotics (3 hours)	
UNSY 410; Uncrewed Systems Sensing Technology (3 hours)	UAS 201: Unmanned and Autonomous Systems Sensors (3 hours)
UNSY 205: Applied Physics for Uncrewed Systems (3 hours)	EL 100: Introduction to DC/AC Circuits (3 hours)
UNSY 307: Uncrewed Systems Networking (3 hours)	UAS 210: Unmanned and Autonomous Systems Design (3 hours)
UNSY 311: Uncrewed Ground Systems and Applications (3 hours)	UAS 202: Unmanned and Autonomous Systems Ground Vehicles (3 hours)
UNSY 313: Uncrewed Maritime Systems and Applications (3 hours)	UAS 230: Unmanned Surface and Underwater Vehicles (3 hours)
UNSY 331: Uncrewed Systems Legal and Regulatory Compliance (3 hours)	UAS 410: Unmanned Vehicle Laws and Regulations (3 hours)
UNSY 405: Uncrewed Systems Operational Environments and Conditions (3 hours)	UAS 250: Unmanned Vehicle Environments (3 hours)
UNSY 415: Uncrewed Space Systems and Application (3 hours)	UAS-240: Unmanned Space Vehicles (3 hours)
UNSY 431: Uncrewed Systems Human Factors Considerations (3 hours)	UAS 330: Unmanned Systems Crew Resource Management (3 hours) UAS 150: Unmanned and Autonomous Systems Crew Planning (3 hours)
UNSY 491: Operational Applications in Uncrewed Systems (3 hours)	UAS 102: Mechanics of Unmanned and Autonomous Systems (3 hours)
STAT 211: Statistics with Aviation Applications (3 hours)	
Specified Electives: Six courses from below	
PMGT 325: Concepts and Practices of Project Management (3 hours)	
COMD 322: Aviation and Aerospace Communication (3 hours)	
COMD 460: Crisis Communication (3 hours)	
BUSW 352: Business Quantitative Methods (3 hours)	
MGMT 408: Airport Management (3 hours)	
MKTG 450: Aviation/Airport Marketing (3 hours)	
EMGY 405: Disaster Policy and Management (3 hours)	
EMGY 310: Fundamentals of Emergency Management (3 hours)	
ESVS 403: Disaster Planning and Control (3 hours)	

HLSD 315: Critical Infrastructure Security, Resilience, and Risk Analysis (3 hours)	
WEAX 364: Weather for Aircrews (3 hours)	AE 390: Aviation Meteorology (3 hours)
ASCI 301: Introduction to Air Traffic Control (3 hours)	UAS 110: Air Traffic Control Communications (3 hours)
ASCI 403: Air Traffic Management (3 hours)	
UNSY 319: Cybersecurity and Countermeasure Considerations (3 hours)	
UNSY 325: Uncrewed Systems Testing and Inspection (3 hours)	
UNSY 329: Uncrewed Systems Computation and Programming (3 hours)	
UNSY 421: Uncrewed Systems Mission Planning (3 hours)	
Minor or Open Electives (18 hours)	
Total Degree Requirements: 120 hours.	

(6) **An analysis of the market for the program;**

Once the domain of military and government agencies, small uncrewed autonomous systems have entered the civilian and commercial sectors. The Embry-Riddle Worldwide Uncrewed and Autonomous Systems program leads to careers beyond engineering and development. Companies also need skilled administrators, operators, managers, and business professionals for their uncrewed aircraft systems.

Below are examples of occupations in the field of uncrewed and autonomous systems. Jobs are available in both the military defense and commercial industries.

- Unmanned Aircraft Systems Planner
- Unmanned Autonomous Systems Project Manager
- Research Engineer, Unmanned Systems
- Computer Scientist, Unmanned Systems
- Sr. Principal Pilot, Unmanned Aerial Vehicle
- Solutions Engineer, Unmanned Systems

U.S. Projections

The current Standard Occupational Classification System (2018) of the U.S. Bureau of Labor Statistics does not include occupational titles or descriptions specifically in uncrewed systems. However, the Bureau's *Occupational Outlook Handbook* offers information for the traditional (manned) aviation area, which includes occupations that are comparable to those in the uncrewed area. These include pilots, scientists and engineers, operations specialists, safety experts, mechanics, and others that may be viewed as proxies.

- *53-2010: Airline Pilots, Copilots, and Flight Engineers*
  Employment nationally of airline pilots, copilots, and flight engineers is projected to grow 14 percent from 2020 to 2030, faster than the average for all occupations. About 14,500 openings for airline and commercial pilots are projected each year, on average, over a decade.

- *53-2022: Airfield Operations Specialists*
  Employment nationally is projected to grow 13% from 2020 to 2030, with 1,300 new jobs.

State of Maryland Projections

The following occupation is listed in *Maryland Long-Term Occupational Projections (2018 – 2028)* from the Maryland Department of Labor:

- *53-2011: Airline pilots, Copilots, and Flight Engineers*
  An increase of 4.23% (1,300 to 1,355) in job openings is projected in Maryland for the period 2018 – 2028 (There is no projection for Airfield Operations Specialists in this Maryland document.)

From the Maryland Department of Commerce: *UAS and Maryland: Opportunity and Accountability*

Maryland has an impressive base of aerospace and UAS companies, ranking fourth nationally in number of firms, following California, Florida, and Virginia. The broader Maryland/Virginia region combined represents an even stronger concentration. Many firms have been active in the defense UAS market since its inception and are investing in developing commercial capabilities. Among the larger players are Lockheed and Northrup Grumman, which house complementary UAS functions in the State. Maryland also has a robust start-up environment in modeling, simulation and big data analytics, an integral piece of the unmanned systems world. Finally, the presence of a very sizeable cybersecurity industry in the State is particularly complementary to the development of the region's UAS industry, as cybersecurity features must be embedded in the hardware and software.

Maryland is home to two of the nation's leading UAS locations: Webster Field Navy Annex and the Patuxent River Naval Air Station (NAS). Both provide testing and evaluation capabilities and access to available airspace for UAV. Patuxent and proximate facilities in southern Maryland are the center of the UMD UAS test site work described above. An 11,000 square foot hangar space, designated for UAS testing, is under construction at the St. Mary's County Regional Airport in southern Maryland. The State's resources also include the Crisfield Airport on the lower Eastern Shore, and the Wallops Flight Facility, located on Virginia's Eastern Shore, just five miles from the Maryland border. Wallops has recently completed an UAV launch ramp. NASA predicts that UAV traffic could "increase up to ten-fold" once the airstrip is active. NASA's presence at Goddard Space Center and Wallops adds to the R&D and testing strengths in the state.

(7) **The State's equal educational opportunity obligations under State and federal law.**

Embry-Riddle Aeronautical University is committed to ensuring that women and minorities are equitably represented among the student body, faculty, staff, and administration of the university, and to devote ample resources to achieving equal opportunity employment. These commitments are in alignment with the Maryland Code, Title 12, Subtitle 1, Section 12-107; Florida's Statute, Title XLIV, Civil Rights, ss. 760.01-760.11; and the federal Civil Rights Act of 1964.

The following, an excerpt from "Civil Rights Equity and Sex/Gender-Based Harassment, Discrimination, and Sexual Misconduct Policy," is the published Embry-Riddle policy on nondiscrimination:

> *Embry-Riddle Aeronautical University continually strives to recognize, respect, and celebrate the differences and cultural identities among individuals as we recruit, support, and embrace our diverse community. We work to provide a safe environment where self-expression is welcome. We strive to create a campus climate free of discrimination, so that networks, partnerships, and cultural competency continue to be fostered through leadership, integrity, care, and respect. In doing so, Embry-Riddle does not permit discrimination or harassment in its programs and activities on the basis of race, color, national origin, sex, gender identity, gender expression, sexual orientation, disability, veteran status, predisposing genetic characteristic, age, religion, pregnancy status or any other characteristic protected by university policy or state, local, or federal law.*
>
> *This policy covers nondiscrimination in employment and in access to educational opportunities. Therefore, any member of the campus community, guest or visitor who acts to deny, deprive, or limit the educational, employment, and/or social access, benefits and/or opportunities of any member of the campus community on the basis of their actual or perceived membership in the protected classes listed above is in violation of the University policy on nondiscrimination. When brought to the attention of the University, any such*

discrimination will be appropriately remedied by the University according to the procedures below.

The following is an official statement of Embry-Riddle's policy on nondiscrimination in employment, which appears in Policy 8.3.1 of the *Administrative Policy and Procedures Manual: Equal Employment Opportunity Policy:*

Purpose and Scope

To promote an employment environment free from all aspects of illegal discrimination. This policy applies to all employees at all locations of the University.

Policy

1. *The University will maintain a policy of nondiscrimination with all employees and applicants for employment. All aspects of employment within the University will be governed on the basis of merit, competence, and qualifications, and will not be influenced in any manner by race, creed, color, religion, gender, age, national origin, disability, protected veteran status, genetic information, sexual orientation, gender identity, or any other status protected by federal, state or local law. The university will provide equal employment opportunity and affirmative action for qualified individuals.*

2. *All decisions made with respect to recruiting, hiring, and promotions for all job classifications will be made solely on the basis of individual qualifications related to the requirements of the position. Likewise, the administration of all other personnel matters such as compensation, benefits, transfers, reduction-in-force, recall, training, education, and social/recreational programs will be free from any illegal discriminatory practices.*

The statement below is found in the Embry-Riddle -- Worldwide Campus student handbook:

https://worldwide.erau.edu/administration/student-handbook

Our campus culture nurtures and celebrates different and unique perspectives, while valuing the ideas and efforts of individual contributors in a safe and non-judgmental environment. We are committed to attracting and retaining a diverse group of students, faculty, and staff. We promote civility and respect. We consider one of our missions to be the stewardship of students, who are our primary focus. Their well-being and feeling of belonging are paramount to Embry-Riddle Aeronautical University – Worldwide (ERAU-WW). We ensure that students feel welcomed and included into the ERAU-WW "family."

C. In addition, the out-of-State institution shall demonstrate that the proposed program, for which the institution is making application:

(1) **Meets a critical and compelling regional or Statewide need; and**

The following statements are from the Maryland Department of Commerce: *UAS and Maryland: Opportunity and Accountability:*

Maryland and the mid-Atlantic region have a significant opportunity to capture new employment and capital investment from UAS as the commercial market grows. Maryland has a concentration of commercial and federal assets that have UAS expertise, with a history of designing and manufacturing larger UAS for military markets.

The continuing development of Unmanned Aircraft Systems (UAS) is part of a much larger "smart machine" evolution across the globe, which will bring both enormous benefit and disruption to economies. Until recently, UAS applications were solidly in the military and federal government realm. Maryland can be a leading player in commercial UAS.

UAS presents a plethora of positive applications in the civil and commercial worlds, offering dramatic safety, accuracy and efficiency gains. While the market is currently relatively small, it is projected to significantly grow and mature within the next decade. UAS is also connected to more general "unmanned" advances in ground vehicle and maritime/underwater technologies.

According to a report from Markets and Markets (www.marketsandmarkets.com), "the major players operating in the UAV (unmanned aerial vehicles) market include General Atomics (US), Northrop Grumman Corporation (US), EHang (China), Parrot (France), PrecisionHawk (US), Israel Aerospace Industries Ltd. (Israel), DJI Technology Co., Ltd. (China), AeroVironment, Inc. (US), and Lockheed Martin Corporation (US)." Northrop Grumman Corporation, Aerovironment, Lockheed Martin, and General Atomics have a strong presence in the Maryland/D.C. area.

The following positions specifically in the field of unmanned systems in Maryland were posted on the Internet on June 8, 2023:

- Posted by Lockheed Martin – 172 positions in unmanned autonomous systems, including systems engineer, flight test engineer, and information systems administrator.
- Posted by *Indeed.com* – 326 unmanned aircraft systems positions in Maryland. Positions included systems engineer, financial analyst, test engineer, and program analyst.
- Posted by *Linkedin.com* – 220 entry-level autonomous systems positions and 104 unmanned aircraft systems positions in Maryland
- Posted by *SimplyHired* in the previous month – 34 unmanned and autonomous systems positions
- Posted by *Glassdoor* – 187 autonomous systems engineering in Maryland
- Posted by *ZipRecruiter* – 47 unmanned aircraft systems positions

As described in Section A/B (6) above, Maryland's current bachelor's degree program in Unmanned and Autonomous Systems is offered at Capitol Technology University. According to the most recently published data from the National Center for Education Statistics, the total number of graduates from all bachelor's degree programs in FY2021 at Capital Tech was 75. There was no specific information for the Unmanned and Autonomous Systems, presumably because the program had not been offered long enough for a graduating class.

With no other Maryland institution offering a bachelor's program in unmanned aircraft systems and with the number of positions advertised, the need for individuals with education and training in UAS is yet unmet in Maryland.

(2) **Is consistent with the Maryland State Plan for Postsecondary Education.**

The Maryland State Plan for Postsecondary Education (https://mhec.maryland.gov/About/Pages/2017StatePlanforPostsecondaryEducation.aspx) is aligned broadly with the Embry-Riddle Aeronautical University Strategic Plan. (https://erau.edu/leadership/president/our-strategic-plan)

The Maryland plan is built on the overarching goals of *access, success,* and *innovation*.

- *Access*: The Maryland Plan seeks to "Ensure equitable access to affordable and quality postsecondary education for all Maryland residents." Similarly, the ERAU Plan supports an increase in institutional and philanthropic financial aid.
- *Success*: The Maryland Plan, Strategy 5, ensures "that statutes, regulations, policies, and practices that support students and encourage their success are designed to serve the respective needs of both traditional and non-traditional students." Embry-Riddle's Worldwide Campus, as the university's online provider, has

for decades served the non-traditional adult working student. Course curricula, class schedules, tuition rates, academic advisement, and other components of the educational experience are specifically geared to the non-traditional student.

The Maryland Plan, Strategy 5, includes a sub-strategy for improved "policies regarding academic program review that meet the State's needs – e.g., workforce shortages, do not duplicate, do not saturate…" Embry-Riddle's Uncrewed and Autonomous Systems degree program offers skills that are clearly in demand in Maryland organizations that value employees who can deliver projects effectively and on time. [Section D (1) above]

The Maryland Plan, Strategy 6, is to "Improve the student experience by providing better options and services that are designed to facilitate prompt completion of degree requirements." Embry-Riddle's online delivery of courses helps students complete their programs through frequent course offerings, nine-week terms, and asynchronous classes.

- *Innovation*: The Maryland Plan pledges to "Foster innovation in all aspects of Maryland higher education to improve access and student success." Maryland's Strategy 8 seeks to "support workforce development and improve workforce readiness." Maryland's Strategy 10 expands "support for research and research partnerships." Embry-Riddle's plan includes a strategy, "Undergraduate Discovery," which integrates research "as a critical element to enrich the undergraduate curriculum and spur innovation." Another strategy, "Innovation," is designed to strengthen industry partnerships.

D. The out-of-State institution shall clearly state the demand and need for a program, for which the institution is making application, in terms of meeting present and future needs of the region and the State in general. Two kinds of need may be identified:

(1) **Societal needs, including the tradition of liberal arts education, which provides immeasurable returns to the State in part by instilling in citizens a capacity for advanced learning and individual and societal benefits regardless of workforce or market demand considerations; and**

The Uncrewed and Autonomous Systems program includes a robust set of general education courses in the liberal arts that emphasize critical thinking, problem-solving, and effective communication. These courses help students develop a sense of social responsibility and an appreciation of diversity, equity, and inclusion. All Embry-Riddle courses are designed to prepare students to live and work effectively by applying skills and information to practical settings.

(2) **Occupational needs relative to meeting workforce requirements or upgrading vocational or technical skills.**

The demand in Maryland for specialists in unmanned and autonomous vehicles is noted in Section C (1) above.

O*NET OnLine categorizes occupations related to autonomous vehicles under the Career Cluster named Science, Technology, Engineering, and Mathematics - specifically, Robotics Engineers (17-2199.08). Related job titles for Robotics Engineers are Automation Engineer, Autonomous Vehicle Design Engineer, Design Engineer, Factory Automations Engineer, Research Engineer, and Robotic Systems Engineer.

O*NET lists suggested tasks required of Robotics Engineers:

- Review or approve designs, calculations, or cost estimates
- Process or interpret signals or sensor data
- Debug robotics programs
- Build, configure, or test robots or robotic applications

- Create back-ups of robot programs or paraments
- Provide technical support for robotics systems
- Design robotic systems, such as automatic vehicle control, autonomous vehicles, advanced displays, advanced sensing, robotic platforms, computer vision, or telematics systems
- Design software to control robotic systems for applications, such as military

O*NET notes that jobs in the field of robotics engineering may require a bachelor's degree (according to 50% of respondents to this question; a master's degree (17%); or an associate degree (17%).

From the same O*NET report, robotics engineers in Maryland earn $128,230 on average per year. Also in Maryland, there were 5,400 robotics engineers employed in 2020, while 5,340 were projected for 2030.
Related to Robotics Engineers, according to O*NET, are Aerospace Engineers, specialists who design, construct, and test aircraft, missiles, and spacecraft. Reported job titles include Aeronautical Engineer, Aerospace Engineer, Aerospace Stress Engineer, Avionics Engineer, Design Engineer, Flight Controls Engineer, Flight Test Engineer, Structural Analysis Engineer, Systems Engineer, and Test Engineer.

O*NET lists suggested tasks required of Aerospace Engineers:

- Formulate mathematical models or other methods of computer analysis to develop, evaluate, or modify design, according to customer engineering requirements
- Plan or conduct experimental, environmental, operational, or stress tests on models or prototypes of aircraft or aerospace systems or equipment
- Formulate conceptual design of aeronautical or aerospace products or systems to meet customer requirements or conform to environmental regulations
- Plan or coordinate investigation and resolution of customers' reports of technical problems with aircraft or aerospace vehicles
- Write technical reports or other documentation, such as handbooks or bulletins, for use by engineering staff, management, or customers

O*NET notes that jobs in the field of aerospace engineering may require a bachelor's degree (according to 59% of respondents to this question; a master's degree (33%), or an associate degree (8%).

From the same O*NET report, aerospace engineers in Maryland earn $131,590 on average per year. Also in Maryland, there were 3,230 aerospace engineers employed in 2020, while 3,450 are projected for 2030.

As described in Section A/B (5) above, Maryland's current bachelor's degree program in Unmanned and Autonomous Systems is offered at Capitol Technology University. According to the most recently published data from the National Center for Education Statistics, the total number of graduates from all bachelor's degree programs in FY2021 at Capital Tech was 75. There was no specific information for the Unmanned and Autonomous Systems, presumably because the program had not been offered long enough for a graduating class.

With only one Maryland institution offering a bachelor's program in unmanned and autonomous systems and considering the number of positions in robotics engineering and aerospace engineering projected, there are opportunities for employment in Maryland for graduates of both the Capitol Tech and the Embry-Riddle programs.

E. Market Demand Data

(1) **The out-of-State institution shall present data projecting market demand and the availability of openings in the job market to be served by the new program for which the institution is making application. The type of information submitted will vary, depending on the program, but may include workforce and employment projections prepared by the federal and State governments as well as professional and trade associations.**

Market demand data for graduates of the Embry-Riddle Uncrewed and Autonomous Systems program are included above in Sections C (1) and D (2).

In addition, the Occupational Handbook of the U.S. Bureau of Labor Statistics (May 2021) reports that Maryland is among five states with the highest concentration of jobs for Aerospace Engineers (17-2011). Reported are 3,490 jobs with an annual mean wage of $133,350.

Industries with the highest concentration of employment of Aerospace Engineers, according to the Occupational Handbook, are aerospace product and parts manufacturing; navigational, measuring, electromedical, and control instruments manufacturing; support activities for air transportation; scientific research and development services, and architectural, engineering, and related services.

(2) **With the exception of programs in the liberal arts, recently collected, existing, or new market surveys shall be used which clearly provide quantifiable and reliable data from prospective employers on the educational and training needs, and the anticipated number of vacancies, expected over the next 5 years.**

From Maryland Department of Commerce: *UAS and Maryland: Opportunity and Accountability:*

> *The UAS market of the recent past has been almost entirely driven by military demand, and accordingly one of the key drivers has been federal defense funding. Revenue for UAV manufacturing in 2015 is estimated at $3.3B, and three global manufacturers dominate: Northrup Grumman (NGC), General Atomics Aeronautical Systems, and Textron. This competitor landscape is shifting as the regulatory framework for the non-military industry is being built and as the recreational market explodes. Market size projections for small UAS (which would include consumer and commercial applications) range from $80B by 2025 (AUVSI, the industry association) to lower estimates by various market analyst firms. The forecast variation is understandable, given the nascent status of the industry. (By way of comparison, consensus estimates for the cybersecurity market are $75B in 2015, growing up to $170B in 2020). Whether at the low or high end of forecasts, the industry's emergence will generate tangible economic opportunities. AUVSI's 2013 economic impact report projected that the integration of UAS into the national air space will total more than $13.6 billion in the first three years of integration and create more than 34,000 manufacturing jobs and 70,000 new jobs. The jobs will pay well ($+40,000) and require technical degrees or training in manufacturing, maintenance, and operations.*
>
> *Unmanned aircraft are part of a larger, growing "autonomous" industry, including vehicles (e.g., self-driving cars, trucks) and maritime, underwater vessels. The mid-Atlantic region brings technology, federal, port and transportation assets that can be tapped to capture a percentage of this larger market.*

From *MarketsAndMarkets*: *Unmanned Aerial Vehicle (UAV) Market* (www.marketsandmarkets.com)

> *Based on function, the UAV market has been segmented into special purpose drones, passenger drones, inspection & monitoring drones, surveying & mapping drones, spraying & seeding drones, air cargo vehicles, and others. Special purpose drones mainly include decoy drones, swarm drones, combat UAV, etc., that are used in military applications.* ***The special purpose drones segment of the UAV market is projected to grow from USD 9,332 million in 2021 to USD 20,548 million in 2026, at a CAGR of 17.1% from 2021 to 2026 and have the largest market share during the forecast period.*** *It is due to rising usage of Special Purpose Drones in military and Combat Operations.*
>
> *Based on point of sale, the UAV market has been segmented into original equipment manufacturers (OEM) and aftermarket. The aftermarket segment of the market has been classified into maintenance, repair, and overhaul (MRO), replacement, and simulation & training. The OEM segment of the UAV market is projected to have a higher CAGR as compared to Aftermarket segment.* ***The OEM segment of the UAV market is projected to grow from USD 22.7 billion in 2021 to USD 49.0 billion by 2026, at a CAGR of 16.7% from 2021 to 2026.*** *This is due to the fact that most of the assembly and modifications required in*

UAV are carried out at the OEM level. ***The aftermarket segment of the market is projected to grow from USD 4.7 billion in 2021 to USD 9.2 billion by 2026, at a CAGR of 14.5% during the forecast period.***

By system, the UAV market has been segmented into platform, payload, data link, ground control station, and launch and recovery system. Each of them performs a different function and ensures UAV's functioning in different applications. There are many different types of payloads that can be attached to UAVs such as cameras, infrared sensors, thermal sensors, weapons, and radars. ***The payload segment of the UAV market is projected to grow at the highest CAGR of 17.7 % from 2021 to 2026.***

Major players operating in the UAV market include General Atomics (US), Northrop Grumman Corporation (US), EHang (China), Parrot (France), PrecisionHawk (US), Israel Aerospace Industries Ltd. (Israel), DJI Technology Co., Ltd. (China), AeroVironment, Inc. (US), Lockheed Martin Corporation (US). These key players offer UAVs applicable for Defense & Government and Civil & Commercial sectors and have well-equipped and strong distribution networks across North America, Europe, Asia Pacific, and the Middle East, Latin America, and Africa.

From *Market Study Report (Skyline market Research LLP*) www.marketstudyreport.com

The global Unmanned Aerial Vehicle market is valued at 16040 million US$ in 2020 and is expected to reach 29120 million US$ by the end of 2026, growing at a CAGR of 8.8% during 2021-2026.

From *Allied Market Research* www.alliedmarketresearch.com/unmanned-aerial-vehicle-market-AO9059

The global unmanned aerial vehicle market was valued at $24.72 billion in 2020 and is projected to reach $70.91 billion by 2030, registering a CAGR of 11.7%. North America was the highest revenue contributor, accounting for $9.80 billion in 2020, and is estimated to reach $24.22 billion by 2030, with a CAGR of 10.0%.

(3) **In assessing demand for a new program, for which the institution is making application, an institution shall also present data showing the current supply of graduates in that program area in the State and region.**

The National Center for Education Statistics, which publishes degree data for every higher education institution, reports 75 total graduates for all bachelor's programs at Capitol Technology University in AY20-21. There is no listing for the BS in Unmanned and Autonomous Systems, presumably because the program is too new to have had graduates by 2021. Total graduates for all levels was 191 and the number of programs was 28.

Since Capitol Technology is the single institution offering an unmanned/uncrewed systems program in Maryland, it is likely that the Embry-Riddle program would join with Capital Tech to help meet a compelling regional and statewide need, as demonstrated above.