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Integration of AAM and UAS in the Aviation Curriculum

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Introduction

Advanced Air Mobility (AAM) and Unmanned Aircraft Systems (UAS) are emerging, disruptive technologies that are changing how people and goods are moved. There are academic curricula, however, that are not up to date on course offerings in such topics. This research examined students' expectations and perceptions of the integration of AAM and UAS in the aviation curriculum. This research was guided by three research questions: 1) Are students who are familiar with UAS also familiar with AAM? 2) Do students who are interested in AAM support the integration of AAM and UAS? 3) How does the current curriculum prepare students for emerging UAS and AAM technologies? The integration of AAM and UAS within the aviation curriculum represents a logical progression, as AAM builds upon UAS technologies. This section introduces the AAM, UAS, and their integration with information summarized from U.S. federal documents published in 2024-2025.

Advanced Air Mobility

Advanced Air Mobility (AAM) has received increasing attention due to its potential to enhance convenience and mobility options while providing clean-energy transportation solutions to underserved communities. AAM is an overarching term for Regional Air Mobility (RAM) and Urban Air Mobility (UAM), usually with the use of advanced technologies such as high levels of automation, electric power, and vertical lift capability [1]. Advanced Air Mobility (AAM) is identified as a maturing entrant in the *Compendium to Federal Aviation Administration (FAA) Aerospace Forecast FY 2025-2045*, where it is treated as an emerging segment of the aviation industry [1].

On 17 October 2022, the U.S. *Senate Bill S.516 - Advanced Air Mobility Coordination and Leadership Act* became *Public Law No: 117-203*, which directs the U.S. Department of Transportation to launch an interagency working group to facilitate the integration of AAM into the national airspace system, with efforts on safety, infrastructure, security (physical and cyber), and necessary federal investment [2]. On 17 December 2025, the AAM Interagency Working Group released the strategy, which includes "six key pillars (Airspace, Infrastructure, Security, Community Planning and Engagement, Workforce, and Automation)" [3, para. 3.1], and the plan, which includes four phases (Leverage, Initiate, Forge, and Transform [LIFT]) [3, 4].

Major AAM Original Equipment Manufacturers (OEMs), such as Joby Aviation, Archer Aviation, and Beta Technologies, have made significant progress toward Entry Into Service (EIS) [1]. It was estimated that the number of AAM departures across the United States would increase from 42,405 in the first year of EIS (Year 1) to 2,820,956 by the fifth year following EIS (Year 6) [1]. Three primary AAM use cases were identified, including Airport Shuttle, Urban Air Taxi, and Air Medical [1]. Airport shuttle services are expected to commence first, as there is a strong demand for traveling between airports and key points of interest, such as downtown areas and tourist attractions [1].

Integrating AAM into the future aviation system has the potential to enhance mobility, connectivity, and convenience for both passenger and cargo transportation [3]. Although aircraft technologies are approaching readiness, a mature support ecosystem with skill labor, robust infrastructure, and clear regulations is needed [3].

Unmanned Aircraft Systems

Unmanned Aircraft Systems or Uncrewed Aerial Systems (UAS) are already reforming sectors such as geological detection, logistics, infrastructure inspection, traffic control, filming, agriculture, emergency response, among others [5, 6].

On 6 June 2025, the presidential executive order *Unleashing American Drone Dominance* directed the safe and full integration of UAS into the National Airspace System (NAS) [6]. Alongside AAM, UAS is also identified as a maturing entrant in the *Compendium to FAA Aerospace Forecast FY 2025-2045* [1].

The FAA forecasts that the number of recreational small drones will increase to approximately 1.93 million units over the next five years, while the commercial drone fleet is expected to grow to approximately 1.11 million units, requiring more than 496,689 remote pilots [1]. As of December 2024, there have been 405,682 remote pilot certificates issued in the U.S. [1]. UAS weighing more than 55 lbs. fall outside of *14 CFR Part 107 - Small Unmanned Aircraft Systems* and therefore need separate rules [1]. Large UAS (over 55 lbs.) need a *49 U.S.C § 44807* exemption or a Public Aircraft Operator (PAO) certification and must be registered as an unmanned aircraft under *14 CFR Part 47 – Aircraft Registry* [1]. The FAA granted 1,114 new *49 U.S.C § 44807* exemptions in 2024, and about 1,079 of them were for agriculture [1].

Integration of AAM and UAS

Advanced Air Mobility (AAM) has six levels (0-5) of maturity as described in the *FAA AAM Implementation Plan Near-Term (Innovate28) Focus with an Eye on the Future of AAM Version 1.0* [7]. The maturity levels range from level 0, representing certification testing and operational evaluation, to level 5, indicating a fully developed AAM ecosystem supporting dense autonomous operations [7]. From level 4 onward, the stage is triggered by certification of fully remote piloted aircraft, and at level 5, by certification of fully autonomous aircraft; automation plays a vital role [7]. The same has been mentioned in the newly released AAM national strategy: Automation will be crucial to mature AAM operations [8]. Integration of AAM and UAS within the aviation curriculum is a logical progression, as AAM represents an advanced application of UAS technology.

The FAA released a separate *Compendium to the FAA Aerospace Forecast FY 2025-2045* specifically for AAM and UAS forecasts, reflecting their status as maturing entrants in the aviation sector [1]. AAM and UAS have shown increasing maturity in both operations and market potential [1]. Integrating AAM and UAS concepts in aviation curricula aligns with industry trends and supports the career development of aviation students.

This study evaluates the current AAM workforce guidelines from the *AAM National Strategy* and *AAM Comprehensive Plan* [4, 8], University syllabi (based on the survey responses), and explores what AAM/UAS topics can be added to the interests of Aviation students through online Qualtrics® [9] surveys that were distributed to students in aviation school.

This study uses a survey to gather students' opinions from pre-defined AAM/UAS topics, in addition to open-ended questions. Learning from the opinions of students against the current curriculum helps professors and researchers better define and design an aviation curriculum that matches students' interests and newer-generation topics.

Background

This background discussion summarizes workforce development guidelines described in the newly released U.S. *AAM National Strategy* and *AAM Comprehensive Plan,* which may be used to introduce aviation students to AAM and UAS concepts.

Policy and Regulatory Guidance on AAM Workforce Development

In the newly released *AAM National Strategy* (December 17, 2025), workforce development is recognized as one of the six key pillars for AAM advancement, emphasizing the need for both private and public workforces to acquire new skills to support elements of the AAM ecosystem [8].

Major challenges remain in AAM workforce development, including gaps in existing curricula, the cost and complexity associated with curricula development, and the limited integration of AAM concepts into State, Local, Tribal, and Territorial (SLTT) education and workforce development programs, despite the increasing maturity of the AAM [8].

The AAM Interagency Working Group provided three recommendations to address the challenges in AAM workforce development [8]. First, there is a need to develop an interagency action plan to address future AAM workforce requirements and to provide necessary training and resources [8]. There are already programs in places, such as the *Carl D. Perkins Career and Technical Education Act of 2006*, the *Workforce Innovation and Opportunity Act*, Section 625 of *the FAA Reauthorization Act of 2018*, Section 440 of *the FAA Reauthorization Act of 2024*, and the *National Apprenticeship Act* [8].

In addition to using programs and resources that are common to traditional aviation and other industries, the AAM workforce strategy should also predict and address future requirements [8]. Specifically, the strategy should foster partnerships with universities to identify gaps in curricula for students preparing to enter the AAM industry [8]. Additionally, it is also important to gather feedback from the AAM industry stakeholders to develop strategies that address and match their needs and expectations [8].

For pathways involving military personnel entering the AAM industry, the strategy should provide recommendations on relevant military specialty codes to facilitate and expedite the hiring process, including both direct and preferential pathways [8]. For registered apprenticeship programs, options could be explored to incorporate AAM into existing programs or to establish new registered apprenticeships specifically tailored to AAM workforce development [8]. For the FAA professional certifications, it is also important to evaluate them in the context of emerging aviation technology [8].

Second, the Standard Occupational Classification (SOC) codes need to be updated to include the careers related to AAM [8]. Without appropriate SOC codes, academic and training institutions may be ineligible to apply for certain federal grants [8]. The next revision of the SOC codes is expected in 2028, updating the *2018 Standard Occupational Classification System* [8].

Third, AAM and aviation workforce development should be planned from early stages at K-12, with active engagement from presidential policy offices to ensure that AAM remains a national strategic priority [8].

The *AAM Comprehensive Plan* was released concurrently with the *AAM National Strategy* on 17 December 2025 [4]. The AAM development is structured into four strategic action phases: Leverage, Initiate, Forge, and Transform (LIFT) [4]. In the first phase, the focus is on leveraging existing practices to support near-term AAM operations [4]. The second phase, Initiate, focuses on bringing partners and subject matter experts together for smart planning [4]. The third phase, Forge, focuses on developing new policies and standards to support the growth of AAM and its supporting infrastructure [4]. The fourth and final phase, Transform, aims to transform the aviation ecosystem towards a fully integrated AAM environment [4].

Introducing AAM and UAS to Aviation Students

As discussed in the *Integration of AAM and UAS* section, combining these concepts within the aviation curriculum represents a natural and logical progression. Advanced Air Mobility (AAM) can be viewed as an extension or advanced application of UAS technology. For aviation students, Unmanned Aircraft Systems (UAS) is not a novel concept; existing curricula already offer a comprehensive range of UAS topics, including federal regulations, operational safety, data analytics, and autonomous systems.

Advanced Air Mobility (AAM), however, is a relatively recent development in the aviation discipline, having primarily emerged over the past decade. As pointed out in the *AAM National Strategy* and the *Compendium to FAA Aerospace Forecast FY 2025-2045*, AAM represents a rapidly maturing sector in aviation [1, 8]. The unique challenges and opportunities through the development of AAM require a supporting ecosystem, such as the workforce [3]. By incorporating AAM-focused content with UAS in aviation curriculum, educational programs can position the aviation students to become adequate professionals who are ready to contribute to the emerging AAM industry. Integrating AAM and UAS concepts within the aviation curriculum builds upon the solid foundation that was established by UAS education, while preparing students for the innovative and emerging sectors of the aviation industry.

To better introduce an integrated AAM-UAS curriculum to aviation students, it is important to assess students' interests. This study recognizes such needs and explores students' perspectives on AAM and UAS integration through a survey. The details of the survey are presented in the following section, Methodology.

Methodology

This section introduces research questions, research design, target population and sample, survey instrument, data collection, data analysis, and ethical considerations.

Research Questions

This study was guided by three research questions:

1. Are students who are familiar with UAS also familiar with AAM?
2. Do students who are interested in AAM support the integration of AAM and UAS?
3. How does the current curriculum prepare students for the emerging UAS and AAM technologies?

Research Design

This study used a survey-based research approach to understand students' opinions and interests in AAM/UAS topics, as well as the current integration of UAS topics and perceptions of AAM within aviation curricula. A cross-sectional survey design was used to collect data from students at a single point in time. There was no experimental manipulation or formal intervention involved in this study.

The survey was distributed to participating aviation students via email using the survey platform Qualtrics® [9] to gather their opinions and interests regarding AAM/UAS topics. Each survey required approximately 5-15 minutes to complete. The survey remained open for six weeks to maximize student responses.

Target Population & Sample

The target population comprised adult university students enrolled in Purdue University, School of Aviation and Transportation Technology (SATT). The investigator planned to recruit 30 student participants from the SATT to provide insights into students' opinions on the integration of AAM and UAS in the aviation curriculum.

This sample size was deemed sufficient to achieve statistical power and to gather insights into students' opinions on the integration of AAM and UAS in the Aviation curriculum. All the students in the SATT were eligible to participate in this study.

Survey Instrument

The survey instrument consisted of 20 items, including an initial consent question, Likert-scale ratings, and open-ended questions, designed to assess the current aviation curriculum related to UAS, perception of AAM, and challenges to curriculum integration. The survey instrument is attached as Appendix A.

Data Collection

The survey was distributed via email using the online survey platform Qualtrics® [9] and remained open for six weeks. Participation was voluntary, and participants may skip any question or stop at any time. Responses were collected anonymously. Each participant had the option to provide their email addresses for an optional gift card drawing; these emails were stored in a separate survey.

Data Analysis

Quantitative survey data were analyzed using descriptive statistics and Pearson's correlation analysis. Open-ended responses were reviewed individually to extract insights into students' opinions. Responses to the survey question regarding the UAS courses taken by students were used in a syllabi analysis, with course objectives coded thematically to identify trends and gaps.

Ethical Considerations

Before the distribution of the survey, ethical approval for Institutional Review Board (IRB) exempt was obtained from the Purdue University Human Research Protection Program Office (IRB 2025-00000215). The study used an anonymous survey to gather students' opinions on the integration of AAM and UAS in the aviation curriculum. The main survey did not collect students' names or email addresses; it asked only for their major and academic level. A single U.S. $20 Amazon gift card was awarded to a randomly chosen student participant. Participants who opted into the gift card drawing provided their email addresses at the end of the survey. The email addresses were stored separately from the main survey data. There was one gift card total for this study; the chance to win, based on the expected participants, was 1/30.

Formal consent was obtained at the beginning of the online survey. Participants could end the survey at any time, and there were no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

Qualtrics® [9] data were accessible only to the investigators. This survey collects only students' opinions regarding the aviation curriculum as it relates to AAM and UAS. No sensitive information or questions were collected or requested. Upon completion of this study and finalization of results, individual survey responses were destroyed (deleted from Qualtrics® [9]).

Participants' email addresses, collected from those opting into the gift card drawing, were stored in a separate Qualtrics® [9] survey. These email addresses were deleted from Qualtrics® [9] after the gift card had been awarded to the recipient.

Results

This section provides descriptive and inferential statistics, as well as a review of the current aviation curriculum. The descriptive statistics include survey completion rate; students' familiarity with UAS and AAM; levels of interest for AAM and integrated AAM-UAS topics; preferred instructional formats for AAM/UAS topics; and preferred AAM/UAS topics. The inferential statistics consist of Pearson's correlation analyses. The curriculum review provides an overview of the UAS/AAM courses offered at Purdue University.

Descriptive Statistics

There were 38 complete survey responses, and 36 out of the 38 responses were fully completed (over 95% complete); the remaining 2 responses were over 75% complete, skipping only open-ended questions. There were 38 participants: 9 freshmen, 14 sophomores, 7 juniors, 4 seniors, and 4 graduate students.

Student participants reported their familiarity with UAS and AAM using a five-point Likert scale, ranging from not familiar at all (coded as 1) to extremely familiar (coded as 5). Students' familiarity with UAS had a mean score of 3.4 and a median value of 3.5. Students' familiarity with AAM had a mean score of 2.2 and a median value of 2.0. The distribution of student responses across different familiarity levels for UAS and AAM is shown in Figure 1.

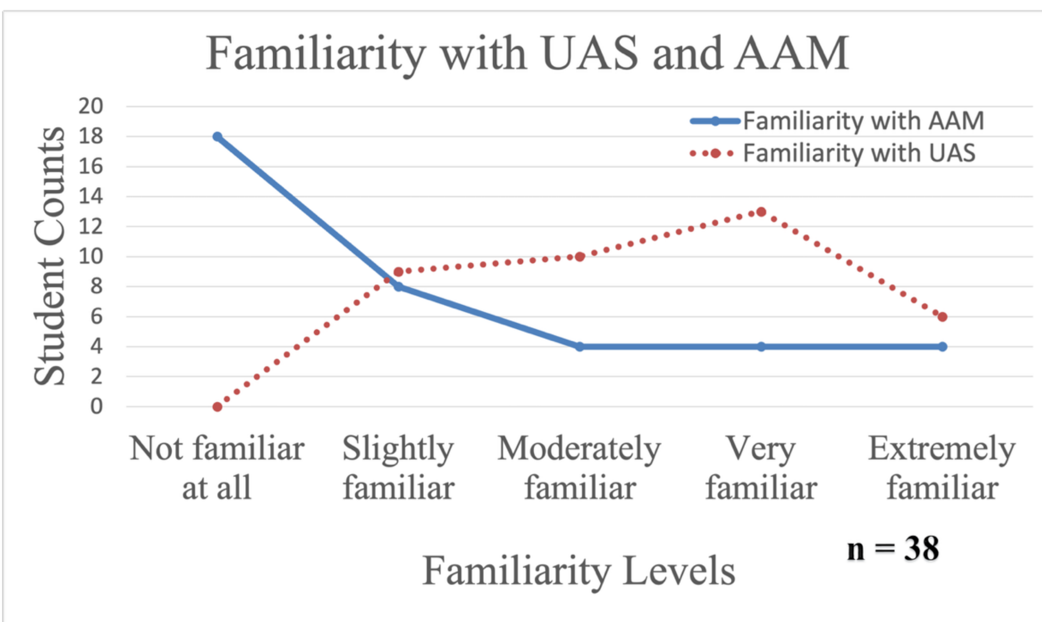

Figure 1. Student Responses across Familiarity Levels for UAS and AAM

Student participants reported their interest in learning more about AAM and in the integration of AAM and UAS within their program using a five-point Likert scale, ranging from not interested at all (coded as 1) to extremely interested (coded as 5). Students' interest in learning about AAM within their program had a mean score of 3.0 and a median value of 3.0. Students' interest in the integration of AAM and UAS within their program had a mean score of 3.2 and a median value of 3.0. The distribution of student responses across different interest levels for AAM and AAM UAS integration in their program is shown in Figure 2.

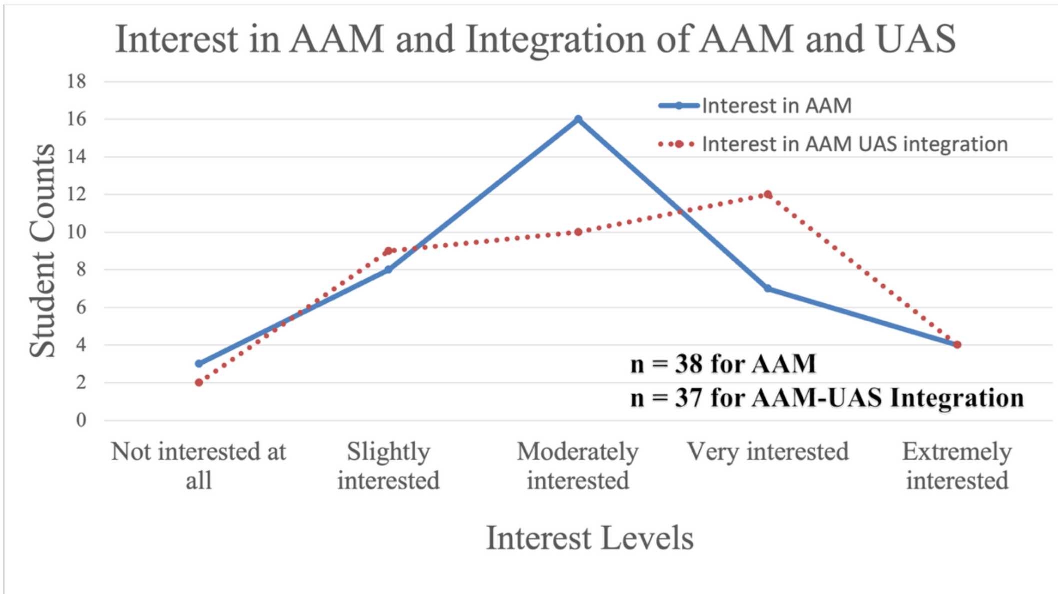

Figure 2. Student Responses across Interest Levels for AAM and AAM-UAS

The next survey question assessed how well the current aviation curriculum prepares students for emerging AAM/UAS technologies, which is also reported using a five-point Likert scale, ranging from not well at all (coded as 1) to extremely well (coded as 5). The responses yielded a mean score of 2.2 and a median value of 2.0.

Student respondents provided their preferred instructional formats, as shown in Table 1, and their preferred AAM/UAS topics, as shown in Table 2.

Which instructional formats would you prefer for AAM/UAS topics? (allow one answer)	# Respondents	Proportion of Data	95% Conf. Interval (Proportion of Data)
Full courses	9	23.7%	13.0% to 39.2%
Modules within existing courses	8	21.1%	11.1% to 36.3%
Workshops/seminars	3	7.9%	2.7% to 20.8%
Labs/simulations	8	21.1%	11.1% to 36.3%
Certificate	10	26.3%	15.0% to 42.0%
Total	38	100%	

Table 1. Students' Preferred Instructional Formats for AAM/UAS Topics

Which of the following AAM/UAS areas would you like to see included in your curriculum? (allow multiple options)	# Respondents	Proportion of Data	95% Conf. Interval (Proportion of Data)
UAS operations and regulations	27	77.1%	61.0% to 87.9%
Autonomous system	25	71.4%	54.9% to 83.7%
eVTOL aircraft systems	23	65.7%	49.2% to 79.2%
Human factors in automated systems	23	65.7%	49.2% to 79.2%
eVTOL operations and regulations	20	57.1%	40.9% to 72.0%
Safety for levels of automation	14	40.0%	25.6% to 56.4%

Table 2. Students' Preferred AAM/UAS Topics

Inferential Statistics

A strong positive correlation was observed between familiarity with concepts of AAM and familiarity with concepts of UAS based on Pearson's correlation analysis, with a p-value of 0.0000273 and Pearson's r of 0.625. The 95% confidence interval for the effect size is 0.382 to 0.787. The line of best fit shows a slope of 0.853 with an R-squared value of 0.391. The correlation matrix heat map for familiarity levels with concepts of AAM and concepts of UAS is shown in Figure 3.

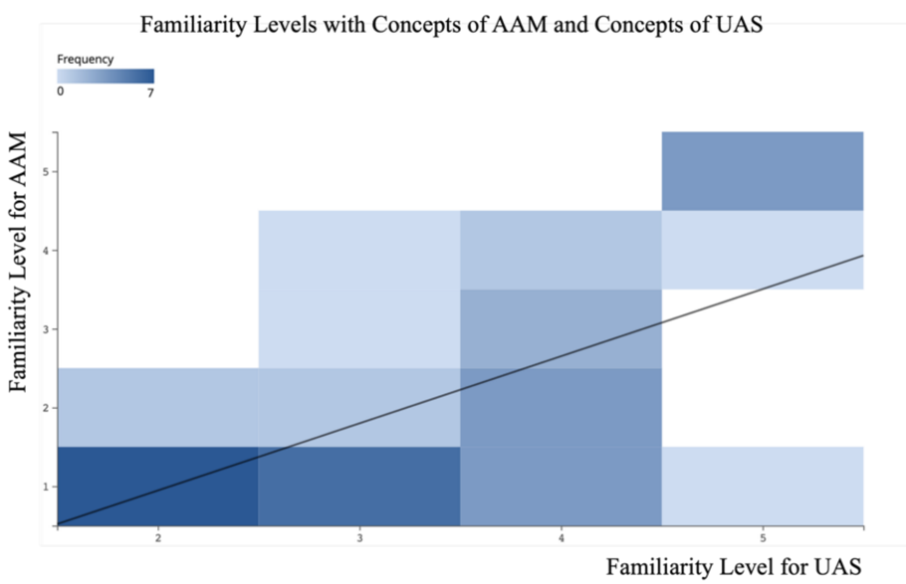

Figure 3. Familiarity Levels with Concepts of AAM and Concepts of UAS

A strong positive correlation was observed between interest in AAM and AAM-UAS integration based on Pearson's correlation analysis, with a p-value of 0.0000181 and Pearson's r of 0.642. The 95% confidence interval for the effect size is 0.402 to 0.800. The line of best fit shows a slope of 0.605 with an R-squared value of 0.413. The correlation matrix heat map for interest in AAM and AAM-UAS integration is shown in Figure 4.

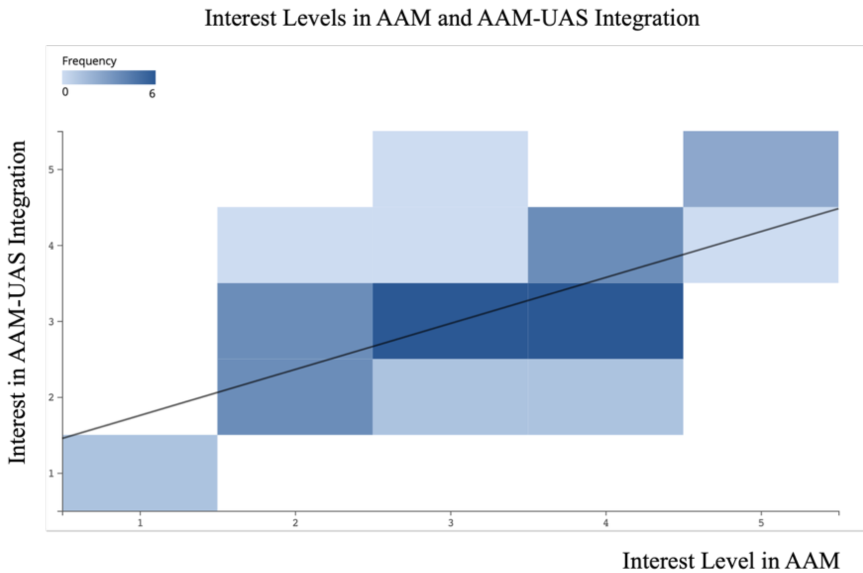

Figure 4. Interest Levels in AAM and AAM-UAS Integration

There was no significant relationship found between how well the current aviation curriculum prepares the student for emerging AAM/UAS technologies and whether the student has sufficient opportunities to learn about automation in aviation, based on Pearson's correlation analysis (Pearson's $r = 0.264$, $p = 0.109$). There was no significant relationship found between how the students are interested in learning more about AAM within their program and how well the current aviation curriculum prepares the students for emerging AAM/UAS technologies, based on Pearson's correlation analysis (Pearson's $r = -0.0891$, $p = 0.595$).

Reviews of Current Aviation Curriculum

Student participants identified the following courses as directly related to UAS and/or AAM. At the 100-level: *Introduction to Unmanned Aerial System Operations* and *Unmanned Aerial Systems: Safety and Risk Management*. At the 200-level: *Civilian Unmanned Aerial Systems* and *Unmanned Aerial Systems Design, Build, Test*. At the 300-level: *Unmanned Autonomous Aerial Systems*, *Introduction to UAS Sensor Technology* and *Unmanned Aerial Systems Applications, Data and Documentation*. At the 400-level courses: *Unmanned Aerial Systems Capstone I* and *Unmanned Aerial Systems Capstone II*. No graduate-level UAS or AAM courses were reported by respondents.

As students progress through the curriculum at Purdue University, topics expand from foundational aeronautical knowledge in unmanned aviation operations, regulations, safety and risk management, operational approvals, and civil and commercial UAS applications to hands-on UAS flight skills and advanced concepts, including autonomous system programming and calibration, manual flight control, payload and system performance analysis, remote sensing, and geospatial technologies. The two 400-level courses, usually taken during the junior or senior years, were capstone projects designed to demonstrate the cumulative knowledge acquired across the UAS courses. However, a review of the course descriptions indicated that AAM was not explicitly addressed, with the primary focus placed on small UAS applications.

Students' Opinions

Three open-ended questions were given to the student participants:

1. What AAM/UAS topics do you think are missing from the current curriculum?
2. What skills or knowledge areas do you believe will be the most valuable for future aviation professionals?
3. Any additional comments you have for AAM, UAS, or curriculum improvements?

AAM/UAS topics that were not addressed in the current curriculum: AAM in general (e.g., operations, vertiport design, eVTOL aircraft design, and UAS traffic management), fixed-wing UAS operations, integration of AAM and UAS into the NAS, engineering content related to AAM/UAS, AAM/UAS career development, and AAM sustainability.

Student respondents emphasized the importance for future aviation professionals to continuously learn and adapt to evolving and emerging technologies, while possessing fundamental knowledge in regulations, human factors, human-machine interaction, artificial intelligence, and safety management.

In addition, students indicated a preference for the university to communicate and engage with industry partners and to design curricula that are tailored to professional requirements from the outset, thereby providing a holistic and structured educational framework. Respondents also suggested that AAM could be integrated into selected modules within existing UAS curricula. The aviation department could also designate UAS courses offered by other departments as eligible electives, thereby expanding UAS-focused learning opportunities for students.

Discussion

Summary of Findings

Students showed moderate to strong familiarity with UAS topics and weak to moderate familiarity with AAM topics. There was a strong positive correlation between familiarity with UAS topics and familiarity with AAM topics. This finding is consistent with the premise that students who are familiar with UAS are also likely to be familiar with AAM, as AAM represents an advanced application of UAS technology.

Students showed moderate to strong interest in AAM and AAM-UAS integration. At the same time, there was a strong positive correlation between interest in AAM and interest in AAM-UAS integration. This aligns with the discussion in the introduction that integration of AAM and UAS within the aviation curriculum is a logical progression.

In this study, students show interest in all AAM and UAS topics, including UAS operations and regulations, autonomous systems, eVTOL aircraft systems, human factors in automated systems, eVTOL operations and regulations, and Safety for levels of automation. Students prefer teaching in-depth formats or those that provide hands-on experiences, such as full courses, modules within existing courses, labs/simulations, and certificates.

During the review of current UAS/AAM courses that were offered to students in the aviation department, it was found that the options are limited, with only 24-27 credit hours total for the undergraduate students. The content of the UAS/AAM course is heavily focused on small UAS operations, with limited content on AAM and no mention of AAM in the course descriptions. Though the current curriculum does offer a range of AAM/UAS topics from entry level to advanced level, it is in lack of some topics such as AAM in general (e.g., operations, vertiport design, eVTOL aircraft design, and UAS traffic management), fixed-wing UAS operations, integration of AAM and UAS into the NAS, engineering content related to AAM/UAS, AAM/UAS career development, and AAM sustainability. Universities and departments should communicate and engage with the industry partners early in the curriculum design process to develop holistic and well-structured programs from the outset, which are reviewed periodically to ensure continued alignment with industry needs.

It is also recommended that the department consider "Person–Vocational (P–V), Person–Motivational (P–M), and Person–Organization (P–O) fit" when recommending programs to students, as workforce selection is a bidirectional decision [10, pp. 251-255]. Some advanced simulation courses that consider simulation fidelity may help students understand the difference between simulation and real life [11] and how to make decisions in emergencies [12]. Technologies such as augmented and virtual reality can aid in job task training [13], while GIS is increasingly applied in accident analysis [14, 15].

Strengths and Limitations

This study collected enough sample (38 responses), more than the expected 30 responses. It provided the researchers with insights into students' opinions. The survey was well structured to gather responses that could be compared and analyzed within the group as a cross-sectional survey design.

This study only gathered information and feedback based on one aviation department. There are limits to generalizing the results for other aviation departments, such as curriculum differences, experience differences, and other characteristics of their UAS/AAM programs. The process and results of this study may serve as a guide for other departments to conduct their own studies. The same approach may be used for larger studies to gain a wider perception of current aviation students. As UAS/AAM development and deployment continues, the study responses may also change. The survey instrument is provided in Appendix A for readers' convenience. It may be reused with appropriate attribution and in compliance with ASEE copyright requirements.

Future Research

For future research, it is recommended to conduct in-depth qualitative studies, including interviews with students, faculty members, and industry partners, to better align development with the needs of both students and the UAS/AAM industry.

Conclusion

In conclusion, this study explored students' interest in AAM and AAM-UAS integration. Students with a higher familiarity with UAS concepts are more likely to be familiar with AAM concepts. Students with a higher interest in UAS are more likely to be interested in AAM-UAS integration. This aligns with researchers' understanding that integration of AAM and UAS within the aviation curriculum is a logical progression, as AAM represents an advanced application of UAS technology. Current aviation curricula lack several key AAM and UAS topics that are of interest to students, such as AAM in general (e.g., operations, vertiport design, eVTOL aircraft design, and UAS traffic management), fixed-wing UAS operations, integration of AAM and UAS into the NAS, engineering content related to AAM/UAS, AAM/UAS career development, and AAM sustainability. Universities and departments may want to increase communication with the industry partners to develop holistic and well-structured programs, which are reviewed periodically.

Acknowledgement

This study (IRB 2025-00000215) was determined to be exempt from IRB review. Investigators were required to meet all institutional requirements for conducting research with human subjects as outlined in HRP-103 – INVESTIGATOR MANUAL. The Purdue HRPP Office determined that the criteria for exemption have been met and that this study involves No greater than minimal risk. This study was approved under Exempt Categories: (2)(ii) Tests, surveys, interviews, or observation (low risk).

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Appendix A

Survey Instrument

Q1 You are invited to participate in a survey about integration of AAM and UAS into the aviation curriculum. Participation is voluntary, and you may skip any question or stop at any time. Your name will not be collected. You may choose to enter your email for the optional gift card drawing, and it will be stored in a separate survey. There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life. By clicking "Yes! I am happy to help.", you confirm that you are a student in SATT and consent to participate in this study. You are 18 years of age or older and understand the information in the information sheet for this study.

Yes! I am happy to help. (1)

No, maybe another time. (2)

Skip To: End of Survey If You are invited to participate in a survey about integration of AAM and UAS into the aviation cur... = No, maybe another time.

Q2 What is your Major or Concentration?

____

____

Q3 What is your current academic level?

Freshman (1)

Sophomore (2)

Junior (3)

Senior (4)

Graduate (5)

Q4 Have you taken any Purdue courses related to Unmanned Aerial Systems (UAS) or Advanced Air Mobility (AAM)?

Yes (1)

No (2)

Display this question: If Have you taken any Purdue courses related to Unmanned Aerial Systems (UAS) or Advanced Air Mobili... = Yes

Q5 Please indicate the Purdue classes that you have taken that are related to Unmanned Aerial Systems (UAS) or Advanced Air Mobility (AAM)

____

____

Q6 How familiar are you with the concept of Unmanned Aerial Systems (UAS)?

Not familiar at all (1)

Slightly familiar (2)

Moderately familiar (3)

Very familiar (4)

Extremely familiar (5)

Q7 How familiar are you with the concept of Advanced Air Mobility (AAM)

Not familiar at all (1)

Slightly familiar (2)

Moderately familiar (3)

Very familiar (4)

Extremely familiar (5)

Q8 Rate your understanding of the following topics in UAS and AAM. Select the number of stars low (1) to high (5).

Level of Automation (1)	☆	☆	☆	☆	☆
Human-Automation Teaming (2)	☆	☆	☆	☆	☆
Human-Machine Interface (3)	☆	☆	☆	☆	☆
eVTOL aircraft (4)	☆	☆	☆	☆	☆

Q9 How interested are you in learning more about AAM within your program?

Not interested at all (1)

Slightly interested (2)

Moderately interested (3)

Very interested (4)

Extremely interested (5)

Q10 How interested are you in the integration of UAS with AAM?

Not interested at all (1)

Slightly interested (2)

Moderately interested (3)

Very interested (4)

Extremely interested (5)

Note: The survey instrument may be reused with appropriate attribution and in compliance with ASEE copyright requirements.

Q11 Rate the relevancy of the following areas to your future career. Select the number of stars low (1) to high (5).

UAS Traffic Management (1)	☆	☆	☆	☆	☆
AAM operations (2)	☆	☆	☆	☆	☆
Human-Automation Teaming (3)	☆	☆	☆	☆	☆
Human-Machine Interface (4)	☆	☆	☆	☆	☆
Level of Automation (5)	☆	☆	☆	☆	☆

Q12 Which of the following AAM/UAS areas would you like to see included in your curriculum? (please choose all that interests you)

- UAS operations and regulations (1)
- Autonomous system (2)
- Safety for levels of automation (3)
- eVTOL aircraft systems (4)
- eVTOL operations and regulations (5)
- Human factors in automated systems (6)

Q13 How well does the current aviation curriculum prepare you for emerging AAM/UAS technologies?

- Not well at all (1)
- Slightly well (2)
- Moderately well (3)
- Very well (4)
- Extremely well (5)

Q14 Do you feel there are sufficient opportunities (courses, labs, certificates, etc.) for you to learn about automation in aviation?

- Definitely not (1)
- Probably not (2)
- Might or might not (3)
- Probably yes (4)
- Definitely yes (5)

Note: The survey instrument may be reused with appropriate attribution and in compliance with ASEE copyright requirements.

Q15 Which instructional formats would you prefer for AAM/UAS topics?

Full courses (1)

Modules within existing courses (2)

Workshops/seminars (3)

Labs/simulations (4)

Certificate (5)

Q16 What AAM/UAS topics do you think are missing from current aviation curriculum?

____

____

Q17 What skills or knowledge area do you believe will be the most valuable for future aviation professionals?

____

____

Q18 Any additional comments do you have for AAM, UAS, or curriculum improvements?

____

____

Q19 Would you like to enter an email address for the optional gift card drawing?

Yes, please (1)

Nah (2)

Display this question: If Would you like to enter an email address for the optional gift card drawing? = Yes, please

Q20 Please click on the link to enter your email: Submit email