Program Approval

I. General Information

A. Institution Kansas State University

B. Program Identification

Degree Level:	Bachelor – Reduced Credit
Program Title:	Uncrewed Aircraft Systems
Degree to be Offered:	Bachelor of Applied Science in Uncrewed Aircraft Systems
Responsible Department or Unit:	Salina Campus/College of Technology and Aviation/Aviation
CIP Code:	49.0101
Modality:	Face-to-Face
Proposed Implementation Date:	Fall 2026

Total Number of Semester Credit Hours for the Degree: 90-93

II. Clinical Sites:

Does this program require the use of Clinical Sites? No

III. Justification

The Uncrewed Aircraft Systems (UAS) industry is growing rapidly, creating a strong need for professionals with both foundational flight skills and advanced competencies in data analytics, Artificial Intelligence (AI), and system integration (Linkel, 2019). Employers increasingly require a bachelor's degree for leadership, management, and technical roles, yet the traditional four-year model can deter prospective students concerned about cost and time. Many also assume a Remote Pilot in Command (RPIC) certificate alone will suffice, which often leads to a shortfall in the specialized expertise the industry demands (Federal Aviation Administration, 2022).

A three-year bachelor's degree in UAS addresses this gap by providing an accelerated pathway that still meets rigorous academic standards. This format reduces financial and time commitments, making higher education more accessible and appealing to students who might otherwise choose a shorter or less comprehensive credential. At the same time, the condensed curriculum ensures that graduates gain deep expertise in UAS operations, systems engineering, and emerging technologies—equipping them for complex tasks in a fast-evolving field (Ariante & Del Core, 2025).

For industry partners, this program offers a steady pipeline of highly skilled graduates who can rapidly contribute to projects requiring leadership and innovation. These graduates stand out from those holding only RPIC certificates or associate degrees, as the bachelor's program fosters critical thinking, problem-solving, and hands-on experience through internships and real-world application (Federal Aviation Administration, 2022).

By aligning with industry standards and addressing student concerns, a three-year UAS bachelor's degree helps bridge the gap between workforce needs and educational offerings. It creates a win-win scenario: students fast-track their entry into a lucrative career while employers gain access to well-prepared professionals capable of driving UAS innovation forward. This approach ultimately strengthens the UAS ecosystem and ensures a sustainable talent pipeline (Linkel, 2019).

IV. Program Demand: Market Analysis

The Uncrewed Aircraft Systems (UAS) industry is expanding rapidly, with applications spanning agriculture, infrastructure inspection, logistics, emergency response, and defense (Lightcast, 2025). Industry demand for highly skilled UAS professionals continues to grow, yet the current educational landscape does not fully align with workforce needs (Federal Aviation Administration, 2022). While traditional four-year degree programs in UAS exist, no known institutions in the United States currently offer an accelerated three-year bachelor's degree specifically designed to bridge the gap between industry expectations and student concerns regarding time and cost for UAS.

This program stands out as a first-of-its-kind initiative, offering students a streamlined path to a bachelor's degree while maintaining the depth of education required for leadership, management, and advanced technical roles. Industry feedback has reinforced the need for such a program, with six letters of support from leading UAS companies confirming that graduates with bachelor's degrees are preferred over those with associate degrees or RPIC certification alone and an accelerated bachelors is highly desired to keep up with the demand (see attached support letters). Additional letters of support are forthcoming, further validating employer demand for this educational model.

The key market advantage of this program lies in its ability to provide students with the competitive edge of a bachelor's degree while allowing them to enter the workforce sooner. Many students hesitate to commit to a four-year program due to financial and time constraints, often opting for shorter, less comprehensive certifications (Ariante & Del Core, 2025). By offering an accelerated pathway, this program makes a bachelor's degree more accessible and attractive to prospective students while ensuring they receive the advanced training necessary to meet industry demands.

From an employer perspective, companies increasingly seek graduates with not only flight proficiency but also expertise in data analytics, automation, AI integration, and regulatory compliance (Federal Aviation Administration, 2022). The letters of support reflect a strong consensus that a three-year UAS degree will produce professionals who are better prepared to assume leadership roles and drive innovation in the industry. Additionally, this model allows for the integration of internships and real-world experience, further enhancing graduates' readiness for employment.

Given the absence of direct competition and the growing need for highly skilled UAS professionals, this program represents a unique market opportunity. It differentiates itself by addressing both industry requirements and student concerns while positioning the institution as a leader in innovative UAS education. The strong backing from industry stakeholders reinforces the viability of the program and its potential to become a benchmark for future UAS education models nationwide (Lightcast, 2025).

V. Projected Enrollment for the Initial Three Years of the Program

Year	Total Headcount Per Year		Total Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	6	8	180	120
Year 2	15	10	450	150
Year 3	25	15	750	225

VI. Employment

The demand for highly skilled Uncrewed Aircraft Systems (UAS) professionals is accelerating as industries increasingly integrate drone technology into their operations. Kansas State University-Salina's proposed 3-year UAS bachelor's degree program is uniquely positioned to meet this need by producing graduates who are both technically proficient and workforce-ready in a shorter timeframe.

This demand is validated by strong industry backing, with six letters of support already received from companies spanning various sectors, including UAS technology, agriculture, and infrastructure inspection. These companies—such as Censys Technologies, Heinen Brothers Agra Services, Perennial Earth, and Hylio Inc.—have emphasized the growing need for professionals with advanced knowledge beyond RPIC certification or associate degrees.

The accelerated nature of this program ensures graduates can enter the workforce sooner while still possessing

the critical skills required for leadership and technical roles. Employers have consistently indicated that graduates from a three-year bachelor's track will have a competitive edge over those with shorter or less specialized training. Furthermore, by incorporating hands-on experience and internships, this program strengthens the talent pipeline, enabling companies to hire well-prepared candidates who can immediately contribute to complex UAS operations.

With strong employer demand, a diverse range of industry partnerships, and a unique accelerated pathway to employment, the three-year UAS bachelor's degree program presents a compelling solution to the workforce needs of this rapidly evolving field.

VII. Admission and Curriculum

A. Admission Criteria

Qualified Admission criteria are used.

B. Curriculum

Year 1: Fall **SCH = Semester Credit Hours**

Course #	Course Name	SCH
AVT 100	Introduction to Aviation (bucket 6 – arts and humanities; history of aviation)	3
COMM 106	Public Speaking I (bucket 2 – communications)	3
ENGL 100	Expository Writing I (bucket 1 – English pathways)	3
MATH 100	College Algebra (bucket 3 – math pathways)	3
UAS 114	Remote Pilot Certification for UAS	2
UAS 115	Introduction to Multi-Rotor Flight Lab	1

Year 1: Spring

Course #	Course Name	SCH
BUS 315	Supervisory Management	3
ENGL 200	Expository Writing II (bucket 1 – English)	3
MATH 150	Plane Trigonometry	3
UAS 270	Introduction to UAS	3
UAS 312	UAS Flight Instructor Ground School	3
UAS 314	Multi-Rotor Instructor Flight Lab	1

Year 2: Fall

Course #	Course Name	SCH
PHYS 113	General Physics I (bucket 4 – science)	4
UAS 272	UAS Safety Fundamentals	3
UAS 280	Multi-Rotor Construction Lab	2
UAS 374	Processing Remotely Sensed Data	3
	Social & Behavioral Sciences Requirement (bucket 5 – social/behavioral science)	3

Year 2: Spring

Course #	Course Name	SCH
AVT 317	Composites I	3
ENGL 302	Technical Writing	3
UAS 357	Introduction to Fixed-Wing Flight Lab	2
	Social & Behavioral Sciences Requirement (bucket 5 – social/behavioral science)	3
	Bucket 7 – elective choice	3

Year 3: Fall

Course #	Course Name	SCH
UAS 300	UAS Powerplant Fundamentals	3
UAS 367	Introduction to Automated Fixed-Wing	3
UAS 387	UAS Safety Applications	2
UAS 471	Advanced Fixed Wing Operations Flight Lab	2
UAS 480	UAS Senior Design Project I	1
	Technical Elective – 300+	3
	Arts and Humanities elective (bucket 6 – arts and humanities)	3

Year 3: Spring

Course #	Course Name	SCH
AAM 472	Large Fixed-Wing Operations Flight Lab	2
UAS 465	Fixed-Wing Construction Lab and Autopilot Integration	3
UAS 481	UAS Senior Design Project II	2
	Technical Elective – 300+	3
	Technical Elective – 300+ or COT 495 Industrial Internship	3
	Bucket 7 – elective choice	3

Total Number of Semester Credit Hours …… 93
Total credit hours adjusted to 93 with addition of second art/humanities general education course.

VIII. Core Faculty

Note: * Next to Faculty Name Denotes Director of the Program, if applicable
FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
Travis Balthazor	Dept Head/ Instructor	Masters	N	Uncrewed Aircraft Systems	1.0
Ryan Howell	Instructor	Masters	N	Data Analytics	1.0
Dr. Christopher Pettit	Associate Professor	Doctorate	Y	Physics	1.0

Number of graduate assistants assigned to this program …… 1

IX. Expenditure and Funding Sources

A. EXPENDITURES	First FY	Second FY	Third FY
1. Personnel – Reassigned or Existing Positions			
Faculty	$150,000	$150,000	$150,000
Administrators *(other than instruction time)*	$64,300	$64,300	$64,300
Graduate Assistants	$25,240	$25,240	$25,240
Support Staff for Administration (*e.g., secretarial*)	$22,000	$22,000	$22,000
Fringe Benefits *(total for all groups)*	$86,308	$86,308	$86,308
Other Personnel Costs	$0	$0	$0

Total Existing Personnel Costs – Reassigned or Existing	$347,848	$347,848	$347,848
2. Personnel – New Positions			
Faculty	$0	$0	$0
Administrators *(other than instruction time)*	$0	$0	$0
Graduate Assistants	$0	$0	$0
Support Staff for Administration (*e.g., secretarial*)	$0	$0	$0
Fringe Benefits *(total for all groups)*	$0	$0	$0
Other Personnel Costs	$0	$0	$0
Total Existing Personnel Costs – New Positions	$0	$0	$0
3. Start-up Costs - One-Time Expenses			
Library/learning resources	$0	$0	$0
Equipment/Technology	$0	$0	$0
Physical Facilities: Construction or Renovation	$0	$0	$0
Other	$0	$0	$0
Total Start-up Costs	$0	$0	$0
4. Operating Costs – Recurring Expenses			
Supplies/Expenses	$250	$250	$275
Library/learning resources	$0	$0	$0
Equipment/Technology	$1500	$2000	$2500
Travel	$500	$1000	$1500
Other	$0	$0	$0
Total Operating Costs	$2,250	$3,250	$4,275
GRAND TOTAL COSTS	**$350,098**	**$351,098**	**$352,123**

B. FUNDING SOURCES *(projected as appropriate)*	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition / State Funds		$175,107	$350,214	$569,079
Student Fees		$16,618	$26,133	$78,214
Other Sources		$0	$0	$0
GRAND TOTAL FUNDING		$191,725	$376,347	$647,293
C. Projected Surplus/Deficit (+/-) (Grand Total Funding *minus* Grand Total Costs)		**$(158,373)**	**$25,249**	**$295,170**

X. Expenditures and Funding Sources Explanations

A 33% facilitates and administration rate was used. A blended tuition rate of $583.69 (Simple Average: $315.95 (in-state rate) and $851.43 (out-of-state rate). Course fees are based on existing comprehensive fee schedules for the rental costs of equipment and software. All equipment is already in stock.

A. Expenditures

1. Personnel – Reassigned or Existing Positions

A combined 2.5 FTE will come from faculty members listed in section VIII of this document. A combined 1.5 FTE will come from staff and support instructors. These positions are used for live flight training within the

program. These are not new positions.

2. Personnel – New Positions
None

3. Start-up Costs – One-Time Expenses
None

4. Operating Costs – Recurring Expenses
Limited to office costs and travel.

B. Revenue: Funding Sources
Part-time students are calculated at 15 hours annually (6 hours per semester twice per year, plus a single 3-hour course over the summer); whereas full-time students are estimated at 30 hours (15 hours per semester twice per year). And using a blended tuition rate of $583.69 (Simple Average: $315.95 (in-state rate) and $851.43 (out-of-state rate)), we then take the total estimated credit hours for full-time and part-time students. We assume that more part-time students, than full-time students, will be enrolled in this program; additionally, we also assume more out-of-state students will be enrolling in this program due to the audience we will be marketing towards.

We estimate – in the first year - based on 14 total students enrolled in 300 credit hours multiplied times the estimated blended rate and added course fees, that we will bring in roughly $191,000 of tuition revenue for the starting year. Course fees vary by course. With enrollment increases, we estimate a break even in year two. This is largely due to an already existing pool of faculty, staff, and labs already fully furnished with equipment.

C. Projected Surplus/Deficit
The campus intends to develop a digital marketing campaign for this program. We recognize that the blended tuition rate might not be the only approximation method for forecasting ROI, therefore, we have included a worst-case scenario below based on tuition at the in-residence rate only. (This differs from the figures used in Table IX, Section C.) Using this projection, the ROI break even falls one year later in year three. With a healthy ROI in subsequent years.

ROI for all in-residence rate at $315.95/credit hour

- Year 1: Tuition $94,785 + Course Fees $16,618 – Expenditures $350,098 = $(238,695)
- Year 2: Tuition $189,570 + Course Fees $26,133 - Expenditures $351,098 = $(135,395)
- Year 3: Tuition $308,051 + Course Fees $78,214 - Expenditures $352,123 = $34,142

XI. References

Ariante, G., & Del Core, G. (2025). Unmanned Aircraft Systems (UASs): Current State, Emerging Technologies, and Future Trends. *Drones, 9*(1), 59. https://doi.org/10.3390/drones9010059

Lightcast. (2025). *Labor market insights for Uncrewed Aircraft Systems (UAS) occupations.* Retrieved from https://lightcast.io

Linkel, J. (2019). *Unmanned Aircraft Systems demand & economic benefit forecast study.* NASA Technical Reports Server. https://ntrs.nasa.gov/api/citations/20190007020/downloads/20190007020.pdf

Federal Aviation Administration. (2022). *Unmanned Aircraft Systems Beyond Visual Line of Sight Aviation Rulemaking Committee Final Report.* https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/UAS_BVLOS_ARC_FINAL_REPORT_03102022.pdf