# Small Uncrewed Aircraft Systems (sUAS) II Course No. 40491

# Credit: 1.0

|  |  |  |  |
| --- | --- | --- | --- |
| **Student name:**  |  | **Graduation Date:** |  |

Pathways and CIP Codes:Aviation Maintenance and Operations (47.0607) - Flight Operations Strand

Course Description: A course that prepares students for designing and executing advanced flight missions with specific purposes.  Students learn advanced operational principles, UAS design, federal aviation regulations, and mission analysis.  As part of this course, students design, modify, and enhance an sUAS as well as components and/or payload.  Further, students develop skills in analyzing data collected through UAS missions and evaluate/critique mission results.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

**Prerequisite:** Small Uncrewed Aircraft Systems (sUAS) I (40490)

## Benchmark 1: UAS Industry and Occupational Awareness

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Summarize the origins, development, and evolution of small Uncrewed Aircraft Systems (sUAS) operations.  |  |
| 1.2 | Identify career opportunities using small Uncrewed Aircraft Systems (sUAS) technology and analyze job locations, salaries, and the industries or businesses active in this employment sector.  |  |
| 1.3 | Summarize the training, education, and certification expectations for small Uncrewed Aircraft Systems (sUAS) careers. |  |

## Benchmark 2: UAS Safety and Operations

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Accurately interpret and demonstrate knowledge of safety rules related to operating small Uncrewed Aircraft Systems(sUAS).  |  |
| 2.2 | Employ appropriate emergency procedures, including reporting requirements, due to loss of aircraft control link and fly-aways.  |  |
| 2.3 | Demonstrate and execute small Uncrewed Aircraft Systems (sUAS) operations, including  |  |
|  | * Developing and executing the pre-flight checklist.
 |  |
|  | * Developing and executing a mission and flight plan.
 |  |
|  | * Successfully performing various roles on a small Uncrewed Aircraft Systems (sUAS) flight crew (Remote Pilot in Command, Visual Operator, etc.).
 |  |
|  | * Develop and execute the post-flight checklist.
 |  |

## Benchmark 3: UAS Design and Construction

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Identify core components used in the design and construction of small Uncrewed Aircraft Systems (sUAS).  |  |
| 3.2 | Identify tools and equipment used for small Uncrewed Aircraft Systems (sUAS) assembly and repair.  |  |
| 3.3 | Repair, modify, and enhance a small Uncrewed Aircraft System (sUAS).  |  |
| 3.4 | Install and configure external payloads and/or sensors.  |  |
| 3.5 | Test system preflight functionality.  |  |
| 3.6 | Troubleshoot and resolve common small Uncrewed Aircraft System (sUAS) hardware, software, firmware, and communications problems.   |  |

## Benchmark 4: UAS Payload and Data Collection

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Research and explain the processes of loading and payload as it applies to small Uncrewed Aircraft Systems (sUAS).  Identify common types of loads/payloads used with small Uncrewed Aircraft  |  |
| 4.2 | Systems (sUAS) including imaging devices, cameras, radar devices, chemical sensors, etc.  |  |
| 4.3 | Describe factors like weight, size, power consumption, and environmental considerations that affect payload selection for a small Uncrewed Aircraft System (sUAS).  |  |

## Benchmark 5: UAS Mission Planning and Execution

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Research, organize and develop a small Uncrewed Aircraft System (sUAS) mission with a defined outcome(s).  |  |
| 5.2 | Create and utilize a design to build, modify, and/or enhance a small Uncrewed Aircraft System (sUAS) to achieve the mission’s defined outcome(s).  |  |
| 5.3 | Create and execute a flight plan and collect appropriate data related to the mission outcome(s).  |  |
| 5.4 | Format, analyze, and summarize mission data.  |  |
| 5.5 | Present a mission de-brief that summarizes the findings and evaluates/critiques the mission results.  |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

pathwayshelpdesk@ksde.org



900 S.W. Jackson Street, Suite 102

Topeka, Kansas 66612-1212

[https://www.ksde.org](https://www.ksde.org/)

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to any group officially affiliated with the Boy Scouts of America and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.