



Small UAS Safety Certification™ [SUASSC] Course of Study

Safety Certificate Description

The Small UAS Safety Certificate is designed to set a safety inspired foundation for any UAS operation. The Unmanned Safety Institute's Small UAS Safety Certificate covers all pertinent aeronautical knowledge as outlined by the FAA and augments this knowledge with safety practices that will ensure all participants are responsible remote pilots ready to lead in the UAS industry. The Small UAS Safety Certificate meets both the safety-training requirement for USI PRO™ ratings and the FAA knowledge areas required for the Remote Pilot Airman Certificate. The Small UAS Safety Certificate also gives remote pilots a sound foundation in the theoretical, covering a wide survey of UAS technologies and concepts. In order to qualify for the certificate, applicants must complete an approved course of study covering the course themes and a pass a proctored exam. This curriculum will require learners to dedicate considerable time and independent study. The total time required is estimated at 155 hours, with each of the four courses requiring approximately 39 hours of work.

Certificate Objectives;

- The learner will identify important UAS technologies, platforms, and systems.
- The learner will discuss the origins and development of unmanned aviation.
- The learner will discuss commercial and government application of small UAS technology.
- The learner will explore the key concepts and theories associated with remote sensing.
- The learner will discuss the ethics and privacy considerations in the operation of unmanned aircraft.
- The learner will generalize the principles of small UAS aerodynamics and performance.
- The learner will interpret aviation rules and regulations as they pertain to UAS.
- The learner will plan for powered flight in the National Airspace System [NAS].
- The learner will prepare to communicate with air traffic control and conflict aircraft.
- The learner will identify the appropriate attitudes and behaviors associated with commercial aviation
- The learner will recall regulation mandated remote pilot standards and restrictions.
- The learner will interpret the concept of small UAS airworthiness.
- The learner will generalize how aviation safety systems apply to UAS.
- The learner will discuss the human factors associated with UAS.
- The learner will relate Crew Resource Management [CRM] principles to UAS operations.
- The learner will develop attitudes and behaviors associated with aviation safety.



Certificate Themes & Structure

The Small UAS Safety Certificate revolves around four major themes that are derived from the lessons learned in traditional aviation. These themes are:

- Understanding the capabilities and limitations of the technology to include hardware and software.
- Understanding the environment in which UAS technology will be applied, to include both the physical and political environment.
- Understanding the capabilities and limitations of human remote pilots and using that understanding to become a responsible member of the aviation community.
- Explore the concept of safety and the role of managing risk and organizational decision-making to improve unmanned aviation safety.

Each of these themes are explored in separate courses and sequenced in order to build the learner's competency in the field of small UAS aviation safety.

Certificate Courses

The Small UAS Safety Certificate is divided into to four courses that each explores a different one of the curriculum's themes.

Systems	Applications	Personnel	Management
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The *Systems* course is divided into six units of study. Each unit varies in length and difficulty with a standardized structure consisting of required readings, assignments, and progress assessments.

The following units and lessons are required to complete the *Systems* Course:

- Unit 0 Orientation
- Unit 1 Foundations
- Unit 2 Robotic Aircraft
- Unit 3 Data Links
- Unit 4 UAS Control
- Unit 5 Payloads



Certificate Courses (Continued)

Systems	Applications	Personnel	Management
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The *Applications* course is divided into five units of study. Each unit varies in length and difficulty with a standardized structure consisting of required readings, assignments, and progress assessments. The following units are required to complete the *Applications* Course

- Unit 6 Applications
- Unit 7 Elements
- Unit 8 The Remote Pilot Professional
- Unit 9 Regulations
- Unit 10 Operating in the NAS

Systems	Applications	Personnel	Management
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The *Personnel* course is divided into three units of study. Each unit varies in length and difficulty with a standardized structure consisting of required readings, assignments, and progress assessments. The following units are required to complete the *Personnel* Course

- Unit 11 Human Factors
- Unit 12 Crew Resource Management
- Unit 13 Aeronautical Decision Making

Systems	Applications	Personnel	Management
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The *Management* course is divided into four units of study. Each unit varies in length and difficulty with a standardized structure consisting of required readings, assignments, and progress assessments. The following units are required to complete the *Management* Course

- Unit 14 Safety Policy
- Unit 15 Safety Risk Management
- Unit 16 Safety Assurance
- Unit 17 Safety Promotion



Certificate Delivery

The SUAS Safety Certificate curriculum is designed to be delivered using one of three modalities; online, in person, and integrated into a Science, Technology, Engineering, and Math (STEM) education program.

- The online course of study is delivered through an asynchronous online learning environment, where learners are presented chapters from the Unmanned Safety Institute's textbook. In addition to the reading, learners are guided through a series of assignments and quizzes that reinforce and assess the learner's progress. At the end of the online course of study, the learner will be presented with a certificate of training and be eligible to sit for the certification exam.
- In person education will occur at one the Unmanned Safety Institute's partner institutions. The USI Certified Instructor (UCI) will present a series of lectures and lead group discuss that will cover all of the stated learning objectives. Learners will have access to additional materials via the Unmanned Safety Institute's learning management system as well as be required to complete a series of progress checks before being granted a certificate by the partner institution and be eligible to sit for the certification exam.
- STEM educators have the option to "flip the classroom" completing all exercises, discussions, and additional "hands on" experiences in the classroom while the curriculum's core knowledge is presented online along with assessments that the educator can use to grade the student's progress. At the end of the online course of study, the student will be presented with a certificate of training and be eligible to sit for the certification exam.