

## STA Aerospace Academy

*Instructor: Mr. Colin McKee*

*2024-25 Course Syllabus*

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**Office Hours:** 10:30 – 11:30 a.m., or by appointment (Office #B156)

**COURSE DESCRIPTION:** (Year-1) Upon the successful completion of this course, students will have gained a foundational understanding of all the aspects of manned/un-manned flight and will become knowledgeable of various aviation career pathways. During the course, students will be given the option to take the Federal Aviation Administration's (FAA) Part 107 Remote Pilot examination to become certified as a commercial drone pilot. Additionally, as part of a multi-step certification process, students will be fully prepared to take the FAA's Private Pilot knowledge written examination.

(Year-2) Returning STA Aerospace Academy students will expand their understanding of aviation by being prepared to take the FAA's Instrument and Commercial Pilot Knowledge written examinations. Second year students will go beyond basic UAS operations and learn advanced applications such as orthomosaic & LiDAR mapping, volumetric measuring, aerial infrastructure inspections, and thermal imaging.

**INSTRUCTIONAL PHILOSOPHY:** This course is based on a series of activities, projects and hands-on training that will build and reinforce the student's knowledge of aviation systems, terminology, history and regulations. Students will employ equipment developed for and utilized by professionals within the aerospace industry. The class is designed to prepare students in a sequential process that builds upon previous lessons. Since the coursework is at the collegiate-level and focuses on current industry standards, professional conduct at all times is required.

### ESSENTIAL STANDARDS:

1. Summarize the basic principles of flight.
2. Define common aviation terminology, definitions, and acronyms.
3. Recall and utilize basic flight systems, instruments, software and components of unmanned aircraft systems (UAS) and conventional aircraft.
4. Identify significant historical aviation milestones and industry trends.
5. Describe the aviation industry structure, including the role of air carriers, general aviation, corporate aviation and military operations.
6. Ability to recognize and understand differences between propulsion systems and fuel types.
7. Interpret basic weather principles and their impact of aviation operations.
8. Apply the basic principles of navigation, aeronautical chart interpretation, and airport symbology.
9. Conduct basic aircraft flight maneuvers utilizing flight simulators.
10. Plan a cross-country flight utilizing weather forecasts, weight and balance calculations, navigation equipment and aircraft communication radios.
11. Plan, execute and process information obtained from various UAS missions flown.
12. Develop an understanding of current FAA regulations and regulatory authority.

**ASSESSMENT PLAN:** Daily and weekly formative assessments will be used to identify whether students are attaining the essential learning targets on a regular basis. Quizzes, skill exams, student group presentations and knowledge exams will be utilized to prepare students for FAA examinations. Summative assessments will be given at the end of each Aerospace Academy sub-course that shows achievement of the essential standards and concepts accomplished.

**DUAL CREDIT OPPORTUNITIES:** Offered to eligible students according to Coordinating Board of Higher Education. University of Central Missouri

### Fall Semester 2024

AVIA 1903 Aviation History (2)

AVIA 1020 Aeronautics (2)

### Spring Semester 2025

AVIA 1211 UAS Regulations & Applications (1)

AVIA 1212 sUAS Operations (1)

AVIA 1213 sUAS Maintenance & Components (1)

AVIA 1310 FAA Private Pilot Ground School (4)

Cost: \$99 per credit hour (Subject to Change)

Online class sign-up at: [Dualenroll.com](https://dualenroll.com)

For additional assistance contact:

Sandy Cruz

Director, Dual Enrollment

Online and Learning Engagement

[scruz@ucmo.edu](mailto:scruz@ucmo.edu)

(660) 543-8718

Additional information can also be found at the following link:

<https://docs.google.com/presentation/d/1HBKTgp5yIUkLfnbyT4ggydEIUIY5oGKH/edit#slide=id.p7>

**GRADING POLICY:** Grades will be calculated using the Summit Technology Academy approved grading scale. Grades are cumulative throughout each semester. Grades will be based on the following workload and is subject to change at the professor's discretion:

1. Classwork/Homework: 25%
2. Projects: 15%
3. Quizzes / Exams: 60%

The following standardized grading scale is used for STA:

A 95 -100	C 73 - 76
A- 90 - 94	C- 70 - 72
B+ 87 - 89	D+ 67 - 69
B 83 - 86	D 63 - 66
B- 80 - 82	D- 60 - 62
C+ 77 - 79	F 59 & below (No Credit)

Colleges use a four-point system of grading (A= 4, B=3, C=2, D=1, F=0) without a minus and plus option.

**TUTORING/EXTRA HELP PLAN:** STA utilizes a pyramid of interventions in order to ensure students successfully meet the course requirements. Tutoring or extra help can be obtained by contacting the STA teacher through e-mail, phone or in person. The teacher and student will agree on the arrangements.

**ATTENDANCE POLICY:** Regular attendance reflects dependability. The experience gained by students participating in UAS activities and flight simulator sessions cannot be duplicated in the event of absence. **Summit Technology Academy's policy may differ from that of the sending school and will be in effect for the period of attendance at STA.**

Please reference the on-line student handbook for the most current policy at <http://sta.lsr7.org>. All absences must be reported by parents or guardians by contacting the Summit Technology Academy attendance secretary at (816) 986-3413.

A student shall be allowed no more than nine (9) absences, excused or unexcused, per semester in any one class. When a student reaches 9 days, the school will send an informational letter to the parents, regardless of prior contact by phone or conference. The letter serves as notification of the number and type of absences by the student in each class. On the tenth (10) absence, in any one class, the student will not earn credit for that class. Students will have the opportunity to work with their administrator or teacher to make up missed time prior to the end of the semester. If a student still has 10 or more absences at the conclusion of the semester the student will be required to complete an attendance waiver appeal. A waiver to maintain full credit must be submitted by the end of the semester. This waiver should include documentation of illness, funeral, or family emergency from a medical doctor, dentist, minister, or other official source. The waiver should be turned into the attendance office.

**ELECTRONIC GRADEBOOK/POWER SCHOOL WEBSITE:** Grades are updated on a weekly basis. The Power School website address is <https://powerschool.lsr7.org/public/>.

**ACADEMIC LETTERING:** Students who have earned a 95% or higher in a STA program for first semester and a 95% or higher grade at the time of the fifth grading period will receive the academic letter.

**TARDY POLICY:** A tardy will be issued in accordance with the student handbook. Students are on time if they are seated in the classroom at the time of the bell.

**DRIVING PRIVILEGES:** Driving to STA is a privilege and can be revoked at any time. Students are allowed to drive to STA as long as their sending school allows them to drive and a permit is on file. Driving permits may be revoked if a student is frequently tardy, late to school, or exhibits irresponsible driving practices upon entering, or leaving STA, et

**ELECTRONICS POLICY:** No electronics or headphones are allowed in the classroom unless being used in the educational process or as directed by the instructor. Electronics should be placed in backpacks or purses and out of sight. Use of cellphones during class is strictly prohibited without prior permission from the instructor. Unauthorized use of electronics during class is grounds for the student to be removed and sent to the school administration for disciplinary action.

**DAILY MATERIALS NEEDED:**

- Notebook
- Earbuds or wireless earpods
- Pencil(s) and pen(s)
- Flash drive (2GB minimum)
- Folder/Binder

**Course Study Material:**

- Jeppesen – Guided Flight Discovery Private Pilot
- Jeppesen – Aviation History
- Civil Air Patrol – Aerospace: The Journey of Flight
- Gleim - Private Pilot FAA Knowledge Test Prep
- Gleim – Remote Pilot FAA Knowledge Test Prep
- FAA - Pilot's Handbook of Aeronautical Knowledge (FAR/AIM):  
[www.faa.gov/regulations\\_policies/handbooks\\_manuals/aviation/phak/](http://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/)
- CFR PART 107—SMALL UNMANNED AIRCRAFT SYSTEMS  
[www.faa.gov/uas/commercial\\_operators/](http://www.faa.gov/uas/commercial_operators/)

**TECHNOLOGY:** Students are required to utilize technology for various assignments. Outside computer and internet access is required.

**LATE WORK:** No late work is accepted without prior instructor permission.

This syllabus is subject to change at the discretion of the instructor as needed.