



Course Master Syllabus

CATALOG DESCRIPTION: Students will be introduced to the history of aerospace, opportunities in the field of unmanned aircraft systems, fundamentals of flight, navigation, communication, and Federal Aviation Regulations. They will perform a comprehensive examination of the U.S. national air traffic control system and how it affects aviation in general, pilots and safety in particular. This course covers the air traffic control system (enroute, terminal, and flight service stations), air traffic control personnel, training, duties, and facilities, and will provide students with an overview of the many constitutional and other legal considerations relevant to the development, manufacture, and use of unmanned aircraft systems (UAS).

PREREQUISITE(S):

COREQUISITE(S):

CREDITS: 3 **HOURS:** 3

REQUIRED TEXT(S): Gardner, B., & Ison, D. (2018). *The complete remote pilot*. Aviation Supplies & Academies, Inc.

ISBN: 13: 978-1619545625

Rupprecht, J. (2015). *Drones: Their many civilian uses and the U.S. laws surrounding them*. CreateSpace Independent Publishing Platform

ISBN: 13: 978-1502805522

SUPPLEMENTAL MATERIALS (Required):

14 CFR part 71 -- Designation of Class A, B, C, D and E Airspace Areas; Air Traffic Service Rotes; and Reporting Points, available at:

<https://www.ecfr.gov/cgi-bin/text-idx?SID=eb141a55c3279b19dc723087fd7cf59e&mc=true&node=pt14.2.71&rgn=div5>

AIM -- Aeronautical Information Manual, available at:

https://www.faa.gov/air_traffic/publications/media/aim.pdf

PART 107, available at: https://www.e-education.psu.edu/geog892/sites/www.e-education.psu.edu/geog892/files/PART107_RIN_2120-AJ60_Clean_Signed.pdf

PART 107 from Federal Registrar, available at:

<https://www.gpo.gov/fdsys/pkg/FR-2016-06-28/pdf/2016-15079.pdf>



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FAA-H-8083-25B -- Pilot's Handbook of Aeronautical Knowledge, available at:
https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/pilot_handbook.pdf

Integration of Civil Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) Roadmap, available at:
https://www.faa.gov/uas/media/uas_roadmap_2013.pdf

U.S. House of Representatives Committee on Science, Space and Technology, "Unmanned Aircraft Systems (UAS) Research and Development" (January 21, 2015), available at
<http://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=102840>

FAA Testifies To Congress: More UAS Delays, available at <http://www.wiggin.com/15605>

What You Need to Know to Legally Operate Your Drone Under New FAA Regulation, available at:
<https://www.expouav.com/news/latest/need-know-legally-operate-drone-new-faa-regulation/>

Ultimate Guide to U.S. Drone Regulations (2018), available at:
<https://rupprechtlaw.com/drone-regulations>

Tom Schrimpf and Russ Klingaman, Recreational Drones: Do Homeowners' Insurance Policies Provide Coverage? (August 4, 2015), available at
<http://www.claimsjournal.com/news/national/2015/08/04/264918.htm>

Privacy Best Practices, available at: https://www.e-education.psu.edu/geog892/sites/www.e-education.psu.edu/geog892/files/images/lesson05/voluntary_best_practices_for_uas_privacy_transparency_and_accountability_0.pdf

State & Local Drone Laws, available at:
<http://dronecenter.bard.edu/state-and-local-drone-laws/>
<http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>
<https://rupprechtlaw.com/drone-laws-state>



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INSTRUCTOR INFORMATION:

OFFICE HOURS:

CORE COMPETENCIES: The following core competencies are embedded in this curriculum: Communicate effectively in both speech and writing; Apply appropriate mathematical and statistical concepts and operations to interpret data to solve problems; Use scientific method of inquiry, through the acquisition of scientific knowledge; Use computer systems or other appropriate forms of technology to achieve educational and personal goals; Understand ethical issues and situations; Address an information need by locating, evaluating, and effectively using information.

LEARNING ASSESSMENT

<i>Student Learning Outcomes:</i>	<i>Suggested Means of Assessment:</i>
Become proficient in the use of the common language of drones and UAS terminology, with particular emphasis on the acronyms used in aerospace communications.	Tests, homework
Develop an understanding of NAS & navigation for all aircraft.	Tests, homework, practical activity
Develop a mastery of FAA Sectional Chart reading, interpretation, and usage.	Tests, homework, practical activity
Develop an understanding of airport operations and signage.	Tests, homework
Develop and learn to communicate airspace terminology and the communication patterns of pilots.	Tests, homework
Develop the ability to communicate with Air Traffic Control (ATC).	Oral exam, practical activity



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Develop an understanding and practical ability to engage emergency procedures,	Tests, homework
Develop a comprehension of sUAS FAA regulations and Federal, state, and local laws.	Research paper
GRADING SYSTEM:	
A = 90 < 100	C+ = 77 < 80
B+ = 87 < 90	C = 70 < 77
B = 80 < 87	D = 60 < 70
	F = Below 60

DISABILITY SERVICES STATEMENT: Warren County Community College is committed to providing all students equal access to learning opportunities. Student Services is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations. Students who have, or think they may have, a disability (e.g. mental health, learning, vision, hearing, physical or systemic), are invited to contact Student Services to arrange a confidential discussion at (908) 835-2300 or by email at StudentServices@warren.edu as soon as possible. Students registered for Disability Services with Student Services, who have requested accommodations for the current semester will be provided with an electronic letter detailing individual accommodations and are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter.

INSTRUCTIONAL SUPPORT CENTER: The Instructional Support Center (ISC), located in Room 105 across from the library, provides academic support at no cost to WCCC students and is available for courses in which they are currently enrolled. The ISC is staffed with trained professional and peer tutors who are ready to help you understand and succeed. For scheduling or further information, visit the ISC in person, online at <http://www.warren.edu/tutoring/> or by telephone at (908)835-2354.

STATEMENT AND POLICY ON CHEATING, PLAGIARISM AND ACADEMIC DISHONESTY: Students are required to perform all the work specified by the instructor and are responsible for the content and integrity of all academic work submitted. A violation of academic integrity will occur if a student: (1) knowingly represents work of others as one’s own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.



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REQUIRED FORMAT FOR RESEARCH PAPERS: Research papers written for any Warren County Community College class must conform to the required documentation style. Papers written for humanities (and some social science) classes will follow the most recent edition of the Modern Language Association (MLA) in-text citation and bibliographic methods. Social science and science papers will require the use of the most recent edition of the American Psychological Association (APA) in-text citation and bibliographic methods.

Please consult with your instructor regarding the correct documentation style to use in his/her class.

ATTENDANCE POLICY: Students are expected to attend all class sessions of courses in which they are enrolled and are responsible for all material presented in class and all homework assignments.

Grades are based on the quality of work completed in meeting the requirements for a particular course, as stated in the course syllabus and catalog description.

Excessive absence may be considered sufficient cause for dismissal from class by an instructor or other appropriate college staff member. Any decision to exclude a student from class or the College due to excessive absence shall be subject to review by the President in accordance with established procedures. Students who have not attended class are not entitled to a refund of tuition.

WCCC HAYTAIAN & MAIER LIBRARY

Text: 908-652-4445

Email: lstoll@warren.edu

<http://warren.libguides.com>

Please see the library's website above for current semester hours.

The WCCC Library offers a wide range of services to students specific to the information literacy goals of the College which includes suggesting research strategies, facilitating the use of both digital and print resources, as well as assisting students with citations to avoid plagiarism.

The library also serves as the College's computer space, with computers for students to use when the library is open. Students also have free, unlimited printing from the College's computers, as well as space to study.

The library is where students can get their college student ID cards. All students are required to get a student ID card and carry it while on campus for security purposes. To get a student ID card, you must bring another form of ID to the library. You may also be asked to bring a printed copy of your current class schedule. You can get a student ID card any time that the library is open. These cards do not expire and can be used for your duration at WCCC.



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Additionally, the library participates in a national inter-library loan program which is available free to all students and faculty. You can submit ILL requests by emailing the librarian or by stopping by the library's circulation desk.

TOPICAL OUTLINE:

1. Unmanned aircraft systems: learning the language of drones
2. Federal Aviation Administration ("FAA") regulation of the use of UAS in the National Airspace System ("NAS")
3. Overview of the National Airspace System "NAS"
4. Regulations: Remote Pilot Certificate sUAS rating privileges, limitations, and flight operations
5. Introduction to airspace
 - a. Controlled airspace
 - b. Airspace classifications
 - c. IFR
 - d. VFR
 - e. Flight service stations
 - f. TFR's
 - g. NOTAMs
 - h. Aircraft identification
 - i. MOA
 - j. MTR's
 - k. Prohibited areas
 - l. Restricted areas
 - m. Warning areas
6. Introduction to navigation
 - a. Aeronautical charts
 - b. Sectional charts
 - c. VFR terminal charts
 - d. World aeronautical charts
7. Introduction to airport operations
 - a. NOTAMS
 - b. TFR's
 - c. Airport signs & markings
 - d. Air traffic control
8. Radio communications procedures
 - a. Radio phraseology
 - b. Standard pronunciations
 - c. Numbers, altitude & time
 - d. Altimeter settings
 - e. Air traffic control facilities
 - f. TACAN



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- g. VORTAC
- h. Global Navigation Satellite Systems
- i. Global Positioning Systems
- j. Augmentation Systems
- 9. Overview of AIM Aeronautical Information Manual
- 10. Emergency procedures
- 11. Maintenance & pre-flight procedures
- 12. Administrative Procedures Act and the FAA's implementation of federal aviation law
- 13. Civil and criminal issues such as invasion of privacy and trespass
- 14. Freedom of the press
- 15. State & local laws
- 16. UAS insurance
- 17. Ethics of and international laws governing military use of UAS.

GRADING METHODS:

ITINERARY: