**AVIATION SCIENCE AND DRONE MANUFACTURING**



SCHOOL YEAR 2022-2023

INSTRUCTOR: ED SPONENBURG

OFFICE PHONE 354-7441

GOOGLE VOICE 509-593-0111

ATTENDANCE LINE 354-7400

THE AVIATION SCIENCE & DRONE MANUFACTURING CLASS IS LOCATED IN THE NEWTECH SKILL CENTER MAIN BUILDING, ROOM 144, 4141 N. REGAL STREET

SPOKANE, WASHINGTON 99207

MY OFFICE HOURS:

MONDAY – THURS 7:30AM-3:00PM FRIDAY 7:30AM-2:30PM or by appointment

Google Classroom code

## b6potn

Remind App: Text 81010

**Drone1234**

# DESCRIPTION:

## Welcome to the Aviation Science and Drone Manufacturing program. This is your opportunity to experience the exciting world of aviation and drone manufacturing:

* Project-based learning experience
* Develop an understanding of scientific and engineering principles involved with flight
* Earn a FAA Part 107 certificate for piloting drones up to 55-lbs commercially
* Complete FAA Private Pilot Knowledge Exam (PPL ground school)
* Design and deliver a community service project through group and teamwork
* Develop and practice effective communication and leadership skills

## The goals and objectives of this program are:

* To develop responsible, efficient, and professional individuals who will be successful in post-secondary education
* To provide the necessary information so students can make an informed decision on the aviation and manufacturing career choices
* Prepare students to pursue one of several post-high school education/training/career tracks: Airframe and Powerplant license, small, unmanned aircraft pilot, traditional aircraft pilot license, engineering, or manufacturing degree
* To equip all students with basic leadership, employability, and knowledge
* To give a head start on the career path of aviation and/or manufacturing industries

## Teaching Philosophy Aviation Science and Drone Manufacturing Careers

To maximize professional relevance, I blend my own 26 years of Air Force experience with rigorous educational standards. The primary goal for this course is to introduce students to the aviation and manufacturing fields and to prepare them to work in the industry. I have high expectations for the students but offer support to help them succeed. The goal is to teach the necessary skills that the aviation and manufacturing requires and hold them responsible and accountable to implement what they have learned. The skills learned are applied to a job setting and reenforce professionalism, punctuality, and appropriate appearance for industry expectations. Students have exposure to the community through career field visits, industry guest speakers and local leadership opportunities. I believe in capitalizing on each student’s individual strengths and abilities while helping them develop their skills.

# ORGANIZATION

First-year

* Electronic Circuits
* Aviation History
* Basic Aeronautics
* Leadership, Career Preparation, Personal & Professional Development
* Basic Computer Programing
* Computer Aided Drafting/Manufacturing
* Aviation Professions and Specialties
* Intro to Drones
* Systems Thinking
* Aviation Safety/Mishap Prevention
* Drone Build Culminating Project

Second-year (Student that has completed all the first-year requirements)

* FAA 107 Cert Unmanned Aerial System (UAS) Pilot Preparatory Course
* FAA Private Pilot Knowledge Test
* Design Optimization
* Aviation Navigation
* Mission Planning
* Leadership, Career Preparation, Personal & Professional Development
* Aviation Communication
* Aviation Maintenance Lifecycle
* Leadership/resource management, design a presentation that will be presented by the students for career fairs and educational recruitment of the Skill Center
* Drone Adaptation Culminating Project

For employment and pre-apprenticeship preparation, students will be working with Marie Miller, NEWTech’s Apprenticeship Coordinator where they will work to:

* Complete an employment and/or apprenticeship application
* Design a personal resume for your industry
* Communicate professionally using digital platforms
* Demonstrate interviewing skills including participating in interviewing with apprenticeship coordinators and employers on Employment Day
* Demonstrate professionalism in the classroom, on outings, and when attending guest speakers

Textbooks and Software:

* Onshape: 3D rendering
* 3D Printing Software
* Lightburn laser cutting software

# GRADING CRITERIA- SEMESTER GRADES AND CREDITS

* Students will receive 3 credits per year (1.5/semester).
* The credits will be a combination of both theory & lab/clinical and professional skills scores.

**Knowledge (35%**: This portion of the grade is composed of average points from assignments, quizzes, and tests. All assignments & tests are due on the assigned date.

**Skills/Lab (40%)**: This portion is composed of projects/presentations.

**Professionalism/Safety (25%)**: These scores will be combination of attendance, professional appearance and conduct, responsibilities, and leadership. Additionally, the ability to work safely in a project based, industrial workplace is critical.

# GRADING SCALE

Grading will be as follows:

100-90 = A

89-80 = B

79-70 = C

69-60 = D

59 and below = F

## Program Benefits:

* 3 high school credits
* Career experience (work-based learning)
* Professional connections and volunteer opportunities
* Competency certificate each year.

**Industry Certifications/Credits:** (\* indicates a test fee applies)

* FAA Private Pilot Knowledge Test\* (prerequisite to accumulating flight time toward private pilot license)
* FAA Part 107 Certificate \*
* 21st Century Professionalism Certificate

# ATTENDANCE POLICY (ALSO SEE STUDENT HANDBOOK FOR COMPLETE SKILLS CENTER POLICY)

NEWTech’s goal is to prepare students for the workplace. “In the real world” most people work every day and are held accountable if they do not show up or are not effective at their job. This policy is designed to help the student transition from student to employee. When a student is absent, a parent or guardian must clear the absence (unless the student has adult status) within two days by calling the 24-hour recorded attendance line at 509-354-7400. If the absence is not cleared within two days, the absence will be treated as a truant. Students must also call my office number to report their absence @ 509-354-7431 no later than 2 hours prior to the start of class. This is to get you in the habit of industry standards when you enter the workplace.

A student may not be allowed to participate in work-based learning if they have the following:

* “Truant” on the attendance record.
* Students have more than 5 unexcused absences for each grading period.

# CLASS RULES & INSTRUCTOR EXPECTATIONS

* Please arrive to class on time. Be prepared (supplies with you) and ready to work.
* Students need to be in their class uniform within the first ten minutes of class.
* Treat fellow classmates and your instructor with respect. Raise your hand to ask questions and don’t interrupt when others are speaking.
* No cell phones or other electronic devices allowed without prior permission of the instructor.
* No food or drinks allowed during lab times. All beverages must have a lid or cap - No open containers.
* Do not touch equipment that you have not been trained or instructed to use.
* Clean up your area before you leave each day (push in your chair, don’t leave trash or paper, and take all your belongings).

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**Please sign and return this section to instructor.**

## I have read, understand, and agree to follow the protocols in the Aviation Science and Drone Manufacturing Syllabus:

Student Signature Date

Parent Signature Date