Stanford Flight

Stanford Flight is Stanford University’s AIAA Design-Build-Fly Competition team, founded in 2015. We compete in the annual Cessna/Raytheon Missile Systems Student Design Build Fly competition, and welcome students from a wide variety of backgrounds, including undergrad and graduate students with varying levels of experience. Each year, the team works to design, fabricate, and demonstrate the flight capabilities of an unmanned, electric powered, radio controlled aircraft to best meet the competition’s specified mission profile. The team utilizes tools such as Solidworks, XFLR5, and eCalc to test and model different designs, then build prototypes to refine our aircraft into its final competition entry. The final model is brought to the intercollegiate competition in the Spring, where we compete for the highest score in flight and ground missions against 80+ teams from other universities around the world. This year, the competition objective is to design a dual purpose regional and business aircraft with minimum wingspan and weight, capable of carrying “passengers,” modelled by bouncy balls, and cargo blocks. This resulted in the design of “Boxy McPlaneface,” a biplane aircraft that can carry up to 42 “passengers” and up to 840g of payload for a duration of 9 minutes. Stanford is currently ranked 31st out of 91 participating teams based on the Design Report scores, and will be performing the flight missions this year on April 19-22 in Wichita, Kansas.

Stanford AIR

StanfordAIR (Aerial Intelligence and Reconnaissance) is Stanford University’s AUVSI Student Unmanned Aerial Systems Competition team. The team was formed at the end of last year, and is currently made up of six undergraduates and a graduate student studying AA, CS, EE, and Math. This year, the AUVSI competition has tasked teams to design a UAV capable of executing a mock search and firefighting task autonomously. The task involves path-planning in the presence of moving obstacles, automatic visual object detection and localization, and dropping a payload of water at coordinates communicated over a flight network. Our current platform is a Skywalker X-8 controlled by a Pixracer autopilot, an Intel Aero Compute Board companion computer provided by Intel, all communicated with over the Picoradio built and provided by Airborne Innovations. The team has also received funding from Volans-i.

SUAVE 101

SUAVE 101 is an introductory course offered as part of the club’s mission to educate the Stanford community through the use of UAVs. Led by experienced members of SUAVE, the course is meant to teach the fundamentals of UAVs covering everything from hardware to software. Even with no prior experience, graduates of the course can feel confident in their ability to build, fly, and program a UAV to fly an autonomous mission. Students can choose to build a ZMR 250 quadcopter or a Yak 55 fixed-wing aircraft.

Community

The Stanford UAV Enthusiasts Engineers and Entrepreneurs (SUAVE) is a club at Stanford University with a mission to educate the Stanford community through the use of UAVs. The club offers SUAVE 101, an introductory course, and is made up of members from various backgrounds, including undergrad and graduate students with varying levels of experience. The club utilizes tools such as Solidworks, XFLR5, and eCalc to test and model different designs, then build prototypes to refine their aircraft into its final competition entry. The final model is brought to the intercollegiate competition in the Spring, where they compete for the highest score in flight and ground missions against 80+ teams from other universities around the world. This year, the competition objective is to design a dual purpose regional and business aircraft with minimum wingspan and weight, capable of carrying “passengers,” modelled by bouncy balls, and cargo blocks. This resulted in the design of “Boxy McPlaneface,” a biplane aircraft that can carry up to 42 “passengers” and up to 840g of payload for a duration of 9 minutes. Stanford is currently ranked 31st out of 91 participating teams based on the Design Report scores, and will be performing the flight missions this year on April 19-22 in Wichita, Kansas.