2nd Annual UTA 3D Printed Aircraft Design-Print-Fly Competition, July 2018

UTA will host its 2nd Annual 3D Printed Aircraft July 14, 2018 at Maverick Stadium in Arlington, Texas. As 3D printing technologies have expanded the design space for many applications, the challenge of leveraging this design freedom for improved performance while satisfying fabrication process constraints has likewise increased. This competition challenges students to

- Integrate design and advanced manufacturing to maximize mission performance
- Design within 3D printing process and material constraints
- Develop lightweight, manufacturable airframe configurations
- Leverage direct digital manufacturing technologies
- Develop team and hands-on design experience

Registration deadline: June 1, 2018
Aircraft check-in date: July 13, 2018
Fly-off date: July 14, 2018
Fly-off location: UTA Football Stadium

Fixed Wing Category
- $1000 prize for longest duration horizontal flight
- Honorable mention for most innovative design
- All lifting surfaces must remain fixed

Rotary Wing Category
- $1000 prize for longest duration vertical flight
- Honorable mention for most innovative design
- A significant proportion of lift is generated by rotation of components or of the entire body

Rules and Details
- All airframe components, including all aerodynamic surfaces, propeller/rotor, and control surfaces, must be printed using a purely (not hybrid) 3D printing technology. Any assembly hardware, hinges, actuators, systems components, etc. that might be used do not need to be 3D printed.
- There are no size, configuration, weight, or material restrictions except that no lighter-than-air methods may be used (e.g. no helium).
- Aircraft may be unpowered or they may be powered using a safe propulsion method (e.g. no rocket motors or external flames) for a maximum duration of 5 seconds
- Aircraft may be controlled or uncontrolled and follow any course but flights must operate safely within a 300 x 160 foot area and remain under 30 feet (i.e. football field). Aircraft that violate these boundaries for a duration longer than 3 seconds will be disqualified.
- All design, analysis, and fabrication of the competition entry is the sole responsibility of the student team members. Student teams are responsible for any costs incurred.
- All design work must be performed by undergraduate or graduate students enrolled Spring or Summer Term at an accredited university but 3D printing may be performed by non-team members or non-student personnel
- Students may participate on more than one team only if the submitted designs are significantly different
- Teams of any size are allowed but prize money is awarded to a team as a whole
- Each team must complete an entry form by the deadline above at https://www.uta.edu/php-lib/machform/view.php?id=3341
- Aircraft must be presented for eligibility evaluation the day before the competition
- Aircraft pilots must be undergraduate or graduate students enrolled Spring or Summer Term at an accredited university
- Flight duration is measured from standstill launch, which may be accomplished by hand, catapult, or any other safe means
- Timing starts when the aircraft is no longer in contact with the ground or launching device.
- Timing stops when the aircraft touches the ground
- Timing and judging will be performed by a panel of UTA faculty, which will have sole and final authority and discretion for verifying eligibility, measuring performance, and resolving disputes

Questions
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