



“The Drones are Coming”

Phase 1 Requirements + Timeline:

REQUIREMENTS:

Competition Disclaimer: The performance of teams based on the rules of this competition will determine the winner. Opportunities for interactions with industry professionals will be provided. These rules are intended to aim at university level curricula. The competition creators reserve the right to modify the rules and issue addendums and updates as the year proceeds. GradFly and the creators of this contest are in no way liable for injuries or harm resulting from participants in this competition. A formal waiver must be submitted with registration.

Group Registration

- Three to five members.
- All members must be undergraduate students at University at Buffalo.
- Groups must register no later than two weeks after the drone contest is announced.
- At registration, group must create a team name and list of members and majors must be submitted to GradFly team by submitting the information on the website.
- Must also include a project title at sign-up.

Prize

- Cash prize of \$1000 dollars by check to the winning team.

"Drone" or Unmanned Self-propelled Vehicle Requirements

- Must be an original idea- will be reviewed by GradFly team to ensure no plagiarism.
- Drone can be aerial, aquatic, or terrestrial.
- Must address a social/economic issue. (Examples include: hypersalinity of road conditions during winter, monitoring invasive species in the Great Lakes region, monitoring of high crime areas, and so on.)
- Project must be feasible concept to fit limitations of readily available technology.

Final Projects

Projects will be judged by a judging panel composed of UB Professors; STEM professionals, executives; and CEO of GradFly.

Teams will pitch their ideas to the judging panel as if they were venture capitalists, or a board of directors looking to fund internal projects.

Professionalism is expected throughout the process.

Projects will be evaluated on creativity, thoroughness, lack of grammatical errors, and salesmanship during the presentation.

A paper will be selected at random to serve as the normalized score rubric.

DELIVERABLES:

Fact Sheet: Must list the goals and purposes of the drone, as well as a brief description of operational goals. The system must be able of withstanding full range of operational environment temperatures, externally and internally. **Drone concept is expected to fit the criteria expected of an actual build.**

Design Journal:

- requires title page with abstract,
- brief description of problem and approach,
- process of developing,
- mission requirements analysis,
- design rationale,
- expected performance
- programmatic risks,
- descriptions of vehicle design
- design descriptions of vehicle, method of autonomy, data link, payload, ground control station, mission planning and data processing.

Drone operational specs: Teams should focus on type of communication, control system, materials used, and the propulsion system.

All materials are due by 11:59 pm of the deadline, with no exceptions.

Concept: must show the group's finished drone will look like from several different angles

- AutoCAD, SolidWorks, or other means (Circuitry, functional block breakdown giving broad overview of system)

Presentation: should be well organized and properly display the summary, concept, brief summary of the design journal, and explain how the drone will combat the selected social problem. Focus should be on professionalism, organization, clarity, and descriptiveness.

Finalists of Phase 1:

Prototype Phase:

- Groups will be required to find a mentor, or they will be assigned one.
- Group must document development in GradFly
- Presentation to the panel to determine the 2015 winner

TIMELINE

Contest details announced after 1 week

- September 29

Informational/Team Creation Session

- October 3 and October 29

Groups must be formed by 2 weeks after that

- November 3

Project overview/Fact Sheet due

- November 10

Model/concept design and project development plan due

- November 17

Description and presentation, project journal due

- December 1

Judging to select the finalists for phase 2 due 13 weeks

- December 3

Finalists announced

- December 8

Finalist Phase TBA