



Undergraduate Research Internship Opportunities (CUSRA/USRA) Summer 2024

Development of conceptual design tools for aircraft systems

The [Aircraft Systems Lab](#) seeks applications from motivated and curious undergraduate students for a summer research internship funded by [CUSRA](#) or [USRA](#).

Background

In the [Aircraft Systems Lab](#), we are researching methodologies and tools to design future, more sustainable aircraft. Our tools aim to improve the conceptual design process of these future aircraft (such as unconventional configurations, hybrid-electric or all-electric propulsion, with or without hydrogen... to name a few) by increasing tackling system and sub-system aspects (such as safety, thermal aspects, or maintainability).

As an undergraduate summer intern, you can contribute to the tool development in various aspects linked to our current projects with industry and academic partners.

Objectives

This summer, we are looking for 1-2 interns covering the following topics:

- Topic 1: Parametric 3D-modelling of aircraft and systems (for unconventional aircraft)
- Topic 2: Improvement of a battery sizing tool
- Topic 3: Data collection and analysis for hybrid-electric, hydrogen-powered, and fuel-cell systems

Required Qualifications

- Programming skills (ideally Python) – or willingness to learn it fast
- For topic 1: basic Catia and/or OpenVsp skills
- Having completed AERO201, AERO290 (and ideally AERO390)

Excellent candidates possess initiative, autonomy, and rigor. Candidates should have a clear interest in potentially pursuing graduate studies, be committed to contributing to high-quality research, and be willing to develop excellent written and oral communication skills. The candidates should also enjoy working in a research lab requiring teamwork and collaboration, incl. evtl. industry partners.

How to apply

Please check out first the [eligibility criteria](#) for the [CUSRA](#) and/or [USRA](#). If you meet the criteria, please send your application per email to susan.liscouet-hanke@concordia.ca using the subject "**USRA/CUSRA 2024**" with the following elements:

- Email with your motivation and relevant experience (brief) – indicate your preference for topics 1, 2, 3
- Up-to-date CV
- Up-to-date transcript

Timeline

The selection of candidates and submission of the application to CURA/USRA program will take place in the week of Feb 19, 2023. Please apply **by Feb 16, 2024**.

Equity, Diversity and Inclusion

In the Aircraft Systems Lab, we are fostering an inclusive research environment. Applications from all qualified candidates are encouraged, including women, members of visible minorities, Indigenous persons, members of sexual minorities, persons with disabilities, and others who may contribute to diversification; candidates are invited to self-identify in their application.