PROJECT TITLE: **Environmentally Focused Aircraft**

OBJECTIVE: Multi-disciplinary Optimization (MDO) of unconventional aircraft configurations.

DESCRIPTION: The project consists of increasing the scope of existing tools by developing new methods and optimization schemes to enable conceptual prediction of mass properties and the structure optimization for unconventional aircraft configurations. The student will have to generate, validate and apply optimization schemes, which combine several existing stand-alone applications (geometry generation, mass prediction, load prediction aerodynamic prediction, etc.) in an MDO setup. The goal is to optimize a given problem based on a specific objective function.

DELIVERABLES: Development, validation, and documentation of weight prediction methods for lifting surfaces, and application of these methods in the MDO design of one or more unconventional aircraft configurations at conceptual level.

BENEFITS:
Industry:
Develop a tool to support Bombardier's Advanced Product Development activities and Strategic Technology initiatives.
Student:
Increase knowledge of aerodynamics, loads, mass properties, structure design, MDO and aircraft configurations.

PRE-REQUISITE: Aerospace engineering student with a keen aerospace interest. The student must have a good understanding of aerodynamics, loads, and MDO. Knowledge of structure design and mass properties a plus.

NO OF HOURS: 500+ man-hours.

PROJECT RESPONSIBLE: Sid Banerjee