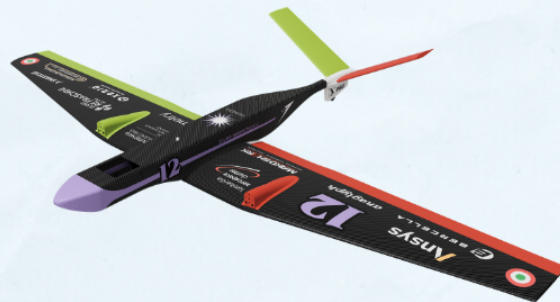




WE ARE RECRUITING

passionate about engineering, management or design?

Join Fly-Mi!



ELECTRONICS, PROPULSION AND CONTROL

BUSINESS AND MARKETING

FLIGHT MECHANICS

COMMUNICATION

AERODYNAMICS

STRUCTURES



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1 Introduction

This document aims to explain how Fly-Mi EUROAVIA Milano intends to handle its recruitment process for the first semester of the academic year 2026/27.

This document provides all the information about the recruitment procedures. All the recruitment departments will also be listed, together with an explanation of their roles within the association and their selection processes. Those interested can contact Fly-Mi EUROAVIA Milano for clarification via email (flymi.aerodesign@gmail.com), LinkedIn or Instagram.

2 General Recruitment Information

Recruitment is open to all bachelor's and master's students at Politecnico di Milano. The recruitment process will run **from 11 September to 1 October**. During this period, a Microsoft Form will be available for candidates to submit their applications. **From 5 October, written tests will be held** for departments that require them. Other departments may request tasks or oral interviews; in such cases, candidates will be contacted by the respective department heads to arrange them.

Each candidate **may apply to a maximum of two departments** from the list below:

- Aerodynamics;
- Business and Marketing;
- Communication;
- Electronics, Propulsion and Control (EPC);
- Flight Mechanics;
- Structures.

2.1 Microsoft Forms information

To submit an application, each candidate must log in using their institutional account and complete the following Microsoft Form: "application Fly-Mi".

The form will request general information, including full name, degree, and year of study. Candidates will also be asked to upload a cover letter and their CV. Applicants must indicate their first and second choice of department. Based on these selections, different follow-up questions will be presented.

At the end of the recruitment process, each candidate will receive a response, whether successful or not. If a candidate has applied to more than one department, they will receive feedback from all departments at the same time. Otherwise, each department will provide its response independently. If a candidate is successful in more than one department, they will be free to choose which offer to accept, regardless of the preferences indicated in the form.

3 Aerodynamics

The aerodynamics department designs the lifting surfaces, optimising the airfoil and defining the wing planform and twist to minimise drag. It shapes the fuselage by working on the nose cone and tail boom to reduce separation. It works on high-lift and additional aerodynamic devices, such as flaps, fairings and, if required by the competition, parachutes. The department brings together three distinct roles: fluid dynamics analysts, CAD designers, and coding/algorithm developers. The workflow employs a variety of simulation software with differing fidelity. A conspicuous part of the job is knowing the limits of each one and choosing the right model for the task. Both creative thinkers, who rethink processes and discover new approaches, as well as detail-oriented engineers, who ensure models and geometry execution are precise, are needed.

3.1 Requirements

The department prioritises curiosity, ingenuity and a drive to learn over deep existing technical knowledge. We look for candidates who proactively explore the limits of available tools, ask smart questions, and seek better ways of solving problems. Foundational knowledge of fluid mechanics is evaluated relative to the year of study, but demonstrated interest is more important. Candidates are evaluated across three main profiles (you are not expected to cover all three):

- **Aerodynamics and fluid dynamics:** Experience with low-fidelity (XFOIL, XFRL5) or high-fidelity CFD tools (Ansys Fluent, OpenFOAM).
- **CAD and Surface Modelling:** Experience with parametric CAD software for complex geometry generation and surface preparation.
- **Coding and Optimisation:** Skill in scripting (MATLAB, Python) to build optimisation algorithms, automate workflows, or parse data.

Strong capability in any single profile—even without experience in the others—makes for a compelling candidate.

3.2 Recruitment process

The recruitment process consists of two phases:

- **Written test:** designed to assess not only basic knowledge but, more importantly, reasoning and problem-solving abilities.
- **Oral interview:** an opportunity to learn more about the candidate's profile. During this stage, candidates are welcome—and strongly encouraged—to present any personal projects.

4 Business and Marketing

The Business and Marketing (BM) Department serves as the operational and strategic core of Fly-Mi EUROAVIA Milano. This team focuses on building strong, genuine partnerships with companies, treating them as true collaborators rather than just sponsors and to conceive new ideas to make the association grow. Core activities include: Expanding the association's network by connecting with new businesses excited to support student-led projects. Managing the procurement of necessary materials and services. Setting up solid collaboration agreements to ensure our initiatives are delivered successfully.

4.1 Requirements

Previous experience is not required to join the BM department. Curiosity, motivation, and a willingness to get involved are the most important qualities. The department seeks organised, reliable individuals with strong communication skills, who are ready to work collaboratively and bring forward new ideas. For those looking to grow in a dynamic environment and develop cross-functional skills in marketing and project management, the BM department offers a valuable opportunity.

4.2 Recruitment process

The recruitment process begins with the **assignment of a task**, to be completed independently by each candidate. Following this, the task will be reviewed and discussed during an **oral interview**. This stage includes general questions, a deeper evaluation of the submitted task, and some specific questions to evaluate the candidate.

5 Communication

The communication department manages the association's social media channels and website, maintaining and promoting its public image. Through content creation, campaigns, and promotional activities, it ensures visibility for projects and events, while enhancing Fly-Mi's presence within the student community and the aerospace sector. The department is also responsible for designing the drone's livery and the graphics for t-shirts and other merchandise.

5.1 Requirements

Previous experience is not required to join the Communication department. The most important qualities are curiosity and motivation, paired with the ability to work effectively as part of a team. Bringing new ideas to the table is encouraged, therefore self-confidence and creativity are highly valued. The department aims to recruit people with knowledge of graphic design, website design, photography and photo and/or video editing. However, these skills are not mandatory.

5.2 Recruitment process

Candidates are assigned a **task**, to be completed independently. The task will then be reviewed and discussed in an **oral interview**, which will also include general questions. Candidates who wish to include previous works in their application are welcome to do so, as it provides an additional opportunity to showcase their skills. Note that this is not compulsory.

6 Electronics, Propulsion & Control

The EPC Department is responsible for designing and implementing the drone's propulsion, electrical and electronic systems. This includes the entire development process, from selecting and testing motors and propellers to creating full aircraft wiring and developing and experimenting with control and autonomous flight systems.

A central aspect of the department's work involves flight testing, essential for validating developed solutions and optimising the overall performance of the aircraft. Being part of EPC offers the chance to engage in hands-on projects and gain practical experience that is rarely encountered in traditional academic settings.

6.1 Requirements

The EPC Department welcomes students from all faculties and academic backgrounds. Ideal candidates are eager to experiment and grow. The department aims to find proactive and curious individuals, not fully trained experts. Technical knowledge of PBC design, Programming (Python, C++, C, Matlab) or control systems and automation will be evaluated positively. Basic knowledge of common RC components is appreciated (you can learn about this in preparation for this test, it is not mandatory to know about everything already from previous experiences.) A basic list of components is: flight controllers, batteries, servomotor, ESCs and motors. It is very important that the candidate is more than capable of doing it's own research and learning how to work on new components by looking at documentations, videos, forums ect.

6.2 Recruitment process

The recruitment process consists of a Written exam and an Oral Interview. The **written exam** will take place at La Masa campus, place and date will be defined later and communicated to candidates via email. This exam is not a test with a mark like usual university exams but it's aim is to give us a general idea

on your knowledge. **The oral interview** is an opportunity to learn more about the candidate's profile. During this stage, candidates are welcome—and strongly encouraged—to present any personal projects.

7 Flight Mechanics

The Flight Mechanics Department is responsible for the preliminary sizing of the aircraft and the analysis of the mission profile, as defined by the competition rules. Specifically, the department oversees the optimisation of the drone's geometry, the design of the tail, and all control surfaces. It is also tasked with verifying the aircraft's stability and flight characteristics, as well as estimating performance during take-off, climb, cruise, and landing phases.

7.1 Requirements

The department seeks candidates with a strong interest in flight and a willingness to approach complex and constrained problems, such as initial aircraft sizing and mission profile analysis, from fresh perspectives. Curiosity and motivation to learn how to use software tools such as XFLR5 and XFOIL are essential, along with a foundational understanding of flight dynamics and performance. Any background in programming or numerical methods is also highly valued, as it supports the development of in-house optimisation codes. The department is actively looking for both students with limited prior experience but strong motivation, and students with more mature expertise in flight mechanics and performance.

7.2 Recruitment process

The recruitment process consists of a **take-home assignment** designed to assess a candidate's research ability and capacity to independently tackle a complex problem. The assignment will include multiple tasks, one of which must be selected and completed. There is no single correct answer to these questions, instead, the candidate's ability to solve the problem will be evaluated. It is therefore important to document thoroughly not only the final answer, but also all of the process. If the assignment is evaluated positively, it is followed by a **short oral interview**, during which the candidate will have the opportunity to discuss the completed task, as well as showcase eventual personal projects.

8 Structures

The Structures Department is responsible for the aircraft's structural design, analysis, optimisation, and manufacturing, from concept and material selection to assembly. It is suited to students interested in mechanical design, materials, lightweight structures, composites, FEM, and manufacturing.

The department evaluates materials and manufacturing techniques based on mechanical properties, weight, load transfer, and component connections. A key objective is weight optimisation: structures must provide sufficient strength and stiffness while minimising mass through optimised geometry, materials, layups, and internal structures.

The department also uses CAD and structural analysis to evaluate strength, stiffness, deformation, and overall behaviour. Different modelling approaches may be used depending on the problem, and the results guide iterative design improvements.

The work may also involve the design and analysis of mechanisms, such as landing gear actuation systems, as well as other structural and functional requirements defined by the competition rules.

Design for Manufacturing and Assembly is equally important. Candidates may work with composite layup, additive manufacturing, and machining. Components must be designed not only to withstand loads, but also to be manufactured, assembled, inspected, and repaired efficiently.

8.1 Requirements

The Structures Department welcomes students from all academic backgrounds who are interested in mechanical design and willing to learn. Curiosity, logical thinking, problem-solving ability, and the willingness to understand how and why a structure works are considered more important than specific technical knowledge. Useful background knowledge includes:

- Mechanics and strength of materials

- Basic knowledge of engineering materials
- 3D CAD and mechanical design
- Fundamentals of FEM and structural analysis
- Composite materials and laminate design
- Manufacturing processes
- Basic understanding of mechanical joints and load transfer
- Basic understanding of kinematics, articulated systems, and moving assemblies
- Design for Manufacturing and Assembly
- Weight and structural optimisation

Experience with CAD, FEM, composite manufacturing, 3D printing, machining, or similar projects is a plus. However, candidates are not expected to be experts, and specific software knowledge is not required. These skills can be developed within the team.

8.2 Recruitment process

The recruitment process consists of two phases:

- **Written test:** designed to evaluate the candidate's technical fundamentals, reasoning, and problem-solving abilities. The test may include questions on mechanics, materials, structural behaviour, CAD and design principles, manufacturing processes, and basic structural analysis. Some questions may require the candidate to reason about a design problem rather than recall a specific formula or definition.
- **Oral interview:** focused on understanding the candidate's motivation, technical interests, way of thinking, and ability to approach engineering problems. Candidates are strongly encouraged to present personal projects, university projects, practical experiences, or anything else that demonstrates their interest in engineering and design.

Candidates should therefore prepare by reviewing the fundamentals of mechanics and materials, rather than focusing on memorising specific software procedures. It is useful to be comfortable reasoning about simple structural problems, material selection, load paths, mechanical joints, and manufacturing constraints.