

PHD PROGRAMME TABLE 37TH CYCLE

Section “Available Positions and Scholarship” integrated on 22/04/2021

Section “Available Positions and Scholarship” integrated on 20/05/2021

PROGRAMME’S NAME	AEROSPACE SCIENCE AND TECHNOLOGY
DURATION	3 years
PROGRAMME START DATE	01/11/2021
LINGUAGE	Italian, English
MANDATORY STAY ABROAD	3 months
COORDINATOR	Prof. Alessandro Talamelli (alessandro.talamelli@unibo.it)
CURRICULA	N/A
RESEARCH TOPICS	Detailed list at the bottom of the present document
PhD POSITIONS	7
ADMISSION PROCEDURE	Qualifications and research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	Positions linked to research topics
1	PhD Scholarship	Funded by the University of Bologna general budget and by the Department of Industrial Engineering	Radio Science Experiments for Juice mission
2	PhD Scholarship	Funded by the University of Bologna general budget and by the Department of Industrial Engineering	Radio Science Experiments for Bepi Colombo mission
3	PhD Scholarship	Funded by the University of Bologna general budget and by the Department of Industrial Engineering	Autonomous navigation of satellites for proximity and docking operations
4	PhD Scholarship	Funded by the Department of Industrial Engineering	Experimental Analysis of High Reynolds number turbulent flows
5	Industrial PhD	Position reserved for employees of Hypertec Solution S.r.l.	
6	Research Grant	Provided by the Department of Industrial Engineering. The research grant will have a duration of 36 months and gross percipient amount of € 58.101,00	Digital technologies and human- machine interaction in airport control towers
7	PhD position without scholarship		

Admission Exams

	DATE AND TIME	RESULTS
Qualifications and research proposal evaluation	Applicants’ participation is not required	Available from 12/06/2021**
Oral examination	Date: starting from 01/07/2021 – 10 am CEST* Place: Remotely, using Microsoft Teams	Available from 08/07/2021**

* In case that the oral examination cannot be completed in one day due to the large number of applicants, the oral examination detailed schedule shall be made available on the webpage [Studenti Online](#) together with the results of the qualifications evaluation. **During the oral examination applicants may express their interest in one or more positions linked to specific research topics.**

** The **results of the admission exams** will be available on the webpage [Studenti Online](#) (select “summary of the requests in progress” > “see detail” and open the .pdf file at the bottom of the page. **No personal written communication will be sent to applicants concerning the examinations results.**

Required and Supporting Documents to be attached to the application

(only documents in Italian, English, French, German and Spanish shall be considered as valid and be assessed by the Admission Board)

Only qualifications obtained during the last 5 calendar years shall be taken into consideration, except for the University Degree. The Admission Board will assess the relevance of the supporting documents to the PhD Programme.

REQUIRED DOCUMENTS	
Identity document	Valid identity document with photo (i.e. identity card, passport)
Curriculum Vitae	No specific CV format is required
Degrees	Documents attesting the awarding of the first and second cycle degrees, the exams taken and the marks obtained (see Art. 3 of the Call for Applications)
SUPPORTING DOCUMENTS	
Research proposal	Multi-annual research proposal, with special emphasis on the activities to be completed during the first-year course. The proposal must meet the following requirements: <ul style="list-style-type: none"> - it must mention on the first page the research topic of the PhD Programme associated to the research proposal; - it cannot exceed 20.000 characters, including spaces and formulas, if present. This figure does not include: the title, the outline, references and images (such as graphs, diagrams, tables etc. - where present); - it must include: state of the art; project’s description; expected results; references. The research proposal that successful applicants shall carry out during their PhD career may possibly differ from the proposal submitted at the application stage. This shall be defined together with the supervisor and approved by the Academic Board.
Thesis abstract	Abstract of the second cycle degree thesis . Graduands may submit the draft of their thesis (abstracts cannot exceed 5.000 characters, including spaces and formulas, if present. The above figure does not include: title, outline, images such as graphs, diagrams, tables etc. if present)
Personal Statement	The statement shall include the reasons prompting the applicant to attend the PhD Programme and those relevant experiences and research interests, that make the applicant suitable for the specific PhD Programme (3000 characters maximum, including spaces).
Reference Letter/s	No more than 2 reference letters signed by Italian and/or International academics and professionals in the research field, which do not form part of the Admission Board, attesting the suitability of the applicant and his/her interest for the scientific research. Letters shall be uploaded following the procedure on Studenti Online , detailed in the Call for Applications (Art. 3.2).
Publications	List of publications (i.e. monographs, articles on scientific journals, volume chapters)
Other documents	<ul style="list-style-type: none"> - Research activity - whether basic, applied, translational, etc. - carried out in any capacity, including when covered by research grants, and as a staff member of research units - Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes) - Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc)

Evaluation criteria *

Scores will be expressed in points out of 100, as follows.

1. Qualifications and research proposal evaluation

Minimum score for admission to the oral examination: 30 points, Maximum score: 50 points

Qualifications evaluation	Graduation final mark. Graduands (or graduates coming from Universities awarding degrees without a final mark) shall be evaluated on the basis of the Weighted Average Mark (WAM)	20 points max
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	Publications and other documents attesting the applicant's training and skills	5 points max
Research proposal evaluation	Scientific value and innovative nature of the proposal	15 points max
	Description and structure of the proposal	5 points max
	Proposal feasibility	5 points max

2. Oral examination

Minimum score for eligibility: 30 points, Maximum score 50 points

English proficiency	5 points max
Research proposal presentation	30 points max
General knowledge of issues encompassed by the PhD Programme	15 points max

Oral examination aims to assess the suitability of the applicant for scientific research as well as the general knowledge of issues encompassed by the PhD Programme ([see the list of research topics at the bottom of the present document](#)).

The oral examination is carried out in English.

*Possible further evaluation criteria will be available on the [University website](#), selecting the relevant PhD Programme > "More information", at the bottom of the page in the section "Notices".

Final Ranking List and Enrollment

The PhD Programme Aerospace Science and Technology offers **topic-specific or reserved positions only**. Considering the expressions of interest for one or more topic-specific positions made by the applicants during the oral examination, the Admission Board will establish if the applicants can be considered eligible for the allocation of the positions linked to specific research topics, taking into account their skills, experience and aptitude. In case of vacancies, for the replacement, applicants in the sub-ranking list linked to the specific topic shall be taken into consideration. **Should one or more of the abovementioned positions remain vacant, eligible applicants from the general ranking list may be contacted.**

After the publication of the results of the oral examination, the **final ranking list** will be available on the [University website](#), selecting the relevant PhD Programme > "More information", section "Notices" at the bottom of the page.

Following the publication of the final ranking list, successful applicants shall **enroll** on [Studenti Online](#) by the deadline indicated on the [University website](#), selecting the relevant PhD Programme > "More information".

If a successful applicant withdraws from a position, the following applicant in the ranking list, who is also eligible for the specific position, will be contacted. During the replacement procedure, the new terms of enrollment shall be communicated via e-mail to the chosen applicant.

Research Topics

This PhD Programme pursues the education of researchers and high-qualified engineers, operating in the typical fields of Aerospace Engineering and able to address issues related to design and research activities in disciplines such as:

- Aerodynamics and fluid dynamics
- Tribological behavior of metallic materials, with and without surface modifications
- Metallurgical features of metallic components produced by innovative process such as additive manufacturing
- Mechanical and aerospace design and structures
- Astronautics, Space Systems, and Exploration
- Microstructure and mechanical properties of advanced metals and metal matrix composites
- Flight mechanics and control
- Experimental stress analysis, characterization and development of constitutive models
- Design methods and tools in industrial engineering
- Mechanical and aerospace technologies and materials
- Mechanical and Thermal Measurements, applied to aerospace systems.