

Albo n. 2333/2020

Call for applications

for the 2nd level Specializing Master's Programme in

"SpacE Exploration and Development Systems" (13th edition)

Academic Year 2020/2021

(Annex "A"- Rector's decree n. 960)



ART. 1 (Programme overview)

The 13th edition of the 2nd level Specializing Masters Programme in "SpacE Exploration and Development Systems" (SEEDS) is offered by Politecnico di Torino for the academic year 2020/2021.

The administrative seat of this Specializing Master Programme is located at Politecnico di Torino – Office of Specializing Masters Programmes and Lifelong Learning ("Ufficio Master e Formazione Permanente").

The programme is managed by the "Specializing Masters Programmes and Lifelong Learning School" ("Scuola di Master e Formazione Permanente").

The Programme Director is Nicole Viola, professor at the Department of Mechanical and Aerospace Engineering of Politecnico di Torino.

ART. 2 (Training objective, didactic contents and organization of the activities)

SEEDS is focused on the human and robotic exploration of space and on the related missions, systems, and technologies. The purpose of the programme is to provide young graduates with the core applied physics and engineering skills required to develop space systems and missions from initial concept through design, assembly and verification, to launch and operations.

The 2nd level Specializing Master is a full time programme of one academic year duration for a total of 80 ECTS. An internship period will follow. During the internship period, participants will elaborate a project work.

The Project Work is without any doubts one of SEEDS main qualifying features.

It lasts more than six months and is divided into three phases (see table n. 1), each one performed in a different SEEDS site. During the first and second internship phases, students will be host for sessions of concurrent design at the National Space Agencies, i.e the Italian Space Agency during the first internship phase and the French Space Agency during the second internship phase. The final event of the SEEDS Master will be held at ESA/Estec, where the final presentation of the main outcomes of the Project Work will be given by the team of students

The Project Work deals with the design of a wide human space exploration mission. A different mission is identified every year in cooperation with the three SEEDS sites and in agreement with the National Space Agencies and main supporting industries.

Lectures will be held in English; training activities, except for the site visit and the internship, will take place at Campus Politecnico - Lingotto. The programme is residential. Politecnico di Torino defined specific operational procedures concerning the measures against the spread of COVID-19 that are constantly updated according to the provisions of the Italian Authorities on this matter (please refers to http://www.coronavirus.polito.it).

In case COVID-19 emergency should continue and it is not possible to hold classes on site, all classes will be guaranteed online, through a virtual classroom platform (on synchronous basis with possibility to register classes to make these available on asynchronous basis). In case Italian national rules allow to hold classes at Politecnico di Torino but some enrolled students are unable to attend due to their regional or national provisions on COVID-19, these students will be guaranteed the possibility to follow classes online, upon presentation of documentation proving such impeding provisions.

The teaching programme includes 5 months of classroom activities with academic and corporate teaching staff and it is structured as follows (see table n. 2):

- 7 courses
- Internship



Table n.1 – Intership phases

INTERNSHIP PHASE 1	ŀ
PROJECT WORK I (Torino)	
CDF (Concurrent Design Facility) sessions at the Italian Space Agency	
INTERNSHIP PHASE 2	
PROJECT WORK II (Toulouse)	
CDF (Concurrent Design Facility) sessions at the French Space Agency	
INTERNSHIP PHASE 3	
PROJECT WORK III (Leicester)	
Final event of SEEDS Master	
Presentation of PROJECT WORK activities at ESA/ESTEC	

Table n.2 – Organization of the courses

SUBJECT	ECTS	Hours
Fundamentals of space sciences and techniques	6	60
Space Management and utilization	6	60
Space exploration systems I	6	60
Space exploration systems II	6	60
Human space systems I	7	70
Human space systems II	6	60
Space telecommunications, GNC and avionics	8	80
Internship	35	875
	80	1325

The website of the master's programme containing further information on the training objective, the employment opportunities, the calendar of activities, the master's teaching programme, the project work and the selection process is available at: https://didattica.polito.it/master/seeds/2021/introduction.

ART. 3 (Admission requirements)

The 2nd level Specializing Masters Programme is open to a maximum of 15 participants.

You must hold a full degree (Master of Science degree/Laurea specialistica/Laurea magistrale or equivalent qualification) by the enrolment deadline in the following areas:

- LM 17 Physics
- LM 18 Computer Science
- LM 20 Aerospatial and Astronautic Engineering
- LM 22 Chemical Engineering
- LM 25 Automation Engineering
- LM 27 Telecommunications Engineering



- LM 28 Electrical Engineering
- LM 29 Electronical Engineering
- LM 30 Energy and Nuclear Engineering
- LM 32 Computer Systems Engineering
- LM 33 Mechanical Engineering
- LM 44 Mathematical Modelling for Engineering
- LM 58 Universe Sciences
- LM 53 Materials engineering

For applicants holding a foreign qualification: university career of 5 years or more (10 semesters), in the disciplines corresponding to those indicated above.

The Selection Committee reserves the right, at its discretion, to assess the admission of candidates who have graduated in other technical scientific disciplines other than those indicated, in case they demonstrate to have the scientific and cultural preparation to attend the lessons.

You must prove to have a good knowledge of the English language (equivalent to level B2 CEFR) which can be certified by a language certificate included in the list of the accepted certificates (Table n. 3 – English Language certificates).

Table n. 3 - English language certificates

EXAMINATION BOARD	CERTIFICATE	MINIMUM REQUIREMENTS	
IELTS www.ielts.org	IELTS ACADEMIC or GENERAL TRAINING	5.5	
PEARSON https://pearsonpte.com/	Pearson Test of English Academic	59	
ETC	TOEFL IBT	≥72	
ETS www.ets.org	TOEIC	Listening: 400 Reading: 385 Speaking: 160 Writing: 150	
CAMBRIDGE Assessment	All certificates*	Cambridge English Scale score ≥162	
	Cambridge English: PRELIMINARY (PET) obtained before 2016	Pass with Distinction (≥91) Statement of Results is required	
English https://www.cambridgeenglish.org/ formerly known as:	Cambridge English: FIRST (FCE) obtained before January 2015	≥62 Statement of Results is required	
Cambridge English Language Assessment	Cambridge English ADVANCED/CAE obtained before 2015	Any score	
	Cambridge English: PROFICIENCY/CPE obtained before January 2015	Any score	



You are exempted from having one of the above-listed certificates if, upon enrolment, you provide a stamped declaration/certificate written on official letter headed paper, which certifies that:

- a) you have attended at least one semester at high school in a foreign English speaking country or one semester at a high school in which the medium of instruction is English. In the latter case the school must issue a certificate stating that "The medium of instruction is English";
- b) you have attended at least one semester at University in a foreign English speaking country or one semester at a University in which the medium of instruction is English. In the latter case the University must issue a certificate stating that "The medium of instruction is English"
- c) you have a foreign high school diploma which is recognized by the Italian Ministry of Education and Research as equivalent to the Italian high school diploma (diploma di maturità), or you have a higher qualification awarded by a higher education institution in a foreign English speaking country or in which the medium of instruction is English. In both cases the school/University must issue a certificate stating that "The medium of instruction is English".

With regard to points "a" and "b", please note that diplomas awarded by high schools in the USA, UK, Canada, Ireland, Australia and New Zealand do not need to include the phrase "The medium of instruction is English".

The Selection Committee will assess the level of the knowledge of the English language during the remote interview (in accordance with art. 4 of this Call for application), if the applicant does not have one of the required English language certificates. Applicants who do not attend the interview are automatically excluded from the selection process.

Applicants are required to prove their identity before the interview starts by showing an identification document.

Even if you have not earned your Master's degree yet but are going to graduate before the enrolment deadline you can submit your application for admission to the programme.

ART. 4 (Admission and Selection process)

Admission and deadline

The Specializing Masters Programme is open to a maximum of 15 participants.

You can apply for admission for this Specializing Master's Programme ONLY through the Application Form available at: https://didattica.polito.it/master/seeds/2021/how-to-apply

DO NOT apply by e-mail, fax or mail because these applications will NOT be considered.

Application are due by:

• December 9th 2020 at 1:00 pm - italian time

Step 1. Evaluation of applicants' qualifications

<u>ALL</u> the following supporting documents must be attached to your application on Politecnico di Torino website (in English or Italian only):

- 1. Valid identitification document (passport for extra-EU applicants):
- 2. Curriculum vitae (cv must include the authorization to the processing of personal data in compliance with the General Data Protection Regulation (EU Regulation 2016/679) and the Personal Data Protection Code, Legislative Decree 30 June 2003 no. 196 and subsequent amendments);



- 3. List of exams of both Bachelor's and Master's degree programmes:
 - for applicants with degree(s) obtained from a <u>non-Italian University</u> or <u>from a private Italian University</u>:
 official transcript(s), issued by the University of origin, produced on headed paper, containing the full list of all the exams passed and the grades obtained. The transcript(s) must also include the date of the degree conferral.

Upon enrolment, the admitted candidates must submit the original copy of the "Dichiarazione di Valore"/"Statement of validity" (related to the Master's degree) issued by the Italian Diplomatic Mission in the country where the qualification was awarded. If the Master's degree was awarded by a European university, admitted candidates can turn in the "Diploma Supplement" instead of the "Dichiarazione di Valore".

or

- for applicants with degree(s) obtained from an <u>Italian Public University</u>: self-certification ("dichiarazione sostitutiva di certificazione" Art. 46 DPR 28 December 2000, n. 445) in which applicants declare to have obtained both a Bachelor and a Master's degrees.
 - The self-declaration must include: the name of degree, the name of the University, the date of degree conferral and the gradution final grade, the full list of all the exams passed and the grades obtained (these information are required for both degrees).
 - In compliance with art. 75 of D.P.R. 445/2000, should the self-certification be found to be false or incorrect, the applicant loses any benefit which he/she might have acquired on the basis of the untruthful declaration.
- **4.** Application form and questionnaire (available on the webpage of the Specializing Master's programme https://didattica.polito.it/master/home/en/request)
- **5.** Motivation Letter: max 1 page (please, see the template available at the following link https://didattica.polito.it/master/seeds/2021/documentation_required)

If you fail to attach even one of the above mandatory documents, you will be excluded from the selection process.

Optional documents can be attached to the application:

- thesis' abstract: this document is one of the elements attesting the coherence with the Master's topics;
- English language certificate; candidates who do not submit a certificate and are eligible for the second step of the selection process (see below) will be interviewed to ascertain their knowledge of the English language.

After the application deadline, the Selection Committee assesses all the applications and the attached documents.

The Selection Committee can assign a maximum of **90** points, according to the following criteria:

- maximum 40 points related to the CV: studies, publications, awards (max 35 points); work experiences and coherence with Specializing Master's topic (maximum of 5 points);
- maximum 30 points for the education results: average grade; number of years to obtain the final degree;
- maximum 10 points for the motivation: motivation letter analysis (max 5 points) and number of years passed between the date of the MSc degree and the application to SEEDS programme (max 5 points);
- English language level (up to 10 points) for those applicants who:
 - o attach an English language certificate attesting a level higher than B2;
 - attended at least one semester at high school or University in a foreign English speaking country:
 - attended at least one semester at high school or University in which the medium of instruction is English. In this case the school must issue a certificate stating that "The medium of instruction is English";



- have a foreign high school diploma which is recognized by the Italian Ministry of Education and Research as equivalent to the Italian high school diploma (diploma di maturità) in a foreign English speaking country or in which the medium of instruction is English. In the latter case the high school must issue a certificate stating that "The medium of instruction is English";
- have a higher qualification awarded by a higher education institution in a foreign English speaking country or in which the medium of instruction is English. In the latter case the school/University must issue a certificate stating that "The medium of instruction is English";
- If none of the above options apply, no points will be assigned to the candidate for the English language level.

The final score will be based upon the above-mentioned criteria, up to a maximum of **90 points**; candidates who do not reach the minimum score of **40 points** will be considered as "ineligible" and they will not be admitted to the second step of the selection process.

Step 2. Interview

In this phase, the Selection Committee interviews the applicants who passed the first step of the selection process.

Interviews aim to assess:

- the applicants' motivation;
- any previous experience which may be relevant to the contents of the Specializing Master's programme.

Remote interviews will take place soon after the deadline for application submission.

Applicants who do not attend the interview are automatically excluded from the selection process.

During the oral interview, the Selection Committee also assesses the level of English competency of the applicants who did not provide any proof of knowledge of the English language (see options above).

The Selection Committee can assign a maximum of **10 points** to each applicant for the oral interview. The overall score is the sum of the score obtained in the first and second steps of the selection process.

The person in charge of the administrative procedure is Mr. Alberto Pusceddu (Head of the Specializing Master's Programmes and Lifelong Learning Office).

ART. 5 (Selection Outcomes)

At the end of the selection process, the following lists will be published on the "Selection outcomes" page of the Specializing Master Programme's website:



- the lists of applicants admitted to the Specializing Master programme;
- · applicants the reserve list.

Provided that you have attached all the required documents and fulfilled all the requirements, you will see your position in the rankings and your final score on the "Selection outcomes" page, where the official lists are published: https://didattica.polito.it/master/seeds/2021/selection outcomes.

Please note that:

- if you do not fullfill all the requirements or fail to attach to the application the mandatory documents, you will be not admitted:
- if you have not yet obtained the Master's degree you will be provisionally accepted. In case you will not obtain the degree within the enrollment deadline you will not be admitted to the programme.

ART. 6

(Participation confirmation, enrolment and documents submission)

Participation confirmation

In case you are on the list of applicants admitted to the Specializing Master's programme, in order to confirm your participation, you must comply within the deadline defined by Politecnico for participants to accept the offer and:

- download the Acceptance Declaration, fill it in and send it by e-mail to master.universitari@polito.it;
- pay a 1.000,00 euro advance fee (see ART. 8). This payment is needed to confirm the acceptance of the offer for the Specializing Master's programme.

You will receive the advance fee payment request in the same day of the publication of the selection outcomes. You will be given a week to proceed with payment.

Failure to send the declaration and payment within the aforementioned terms is considered as final renounciation to the programme.

In case you are on the reserve list, it means that you are eligible for replacement and will have the possibility to enrol in the programme if one or more participants renounce their offer of admissions. In this case, the Office of Specializing Master's Programmes will contact you according to your order on the ranking list.

Admitted students are given a deadline to confirm their participation.

If you decide to decline your offer of admission, you are invited to inform the Office of Specializing Master's Programmes (master.universitari@polito.it) with an official notification.

Enrolment

If you are admitted, you must enrol at Politecnico before the programme starts. You will receive an e-mail with useful information for your enrolment. You are not allowed to be simultaneously enrolled in another Specializing Master's programme nor in any other university programme. If you are enrolled in another programme, you must finish your studies or suspend them before enrolling in the 2nd level Specializing Master's programme in "SpacE Exploration and Development Systems".

Documents submission

After completing the enrolment process, admitted students must present the original documents uploaded to their Application Form to the Office of Specializing Master's Programmes together with the Acceptance Declaration before the programme starts (please refer to art. 4). The Office of Specializing Master's Programmes will schedule an individual appointment with every admitted student.



If your degree was awarded by a non-Italian University, upon enrolment you must submit the original copy of the Dichiarazione di Valore/Statement of validity (related to your degree) issued by the Italian Diplomatic Mission in the country where the qualification was awarded or Attestato di Comparabilità /Statement of Comparability issued by the CIMEA Centre.

If your degree was awarded by a European university, you can submit your Diploma Supplement instead of the Dichiarazione di Valore/Statement of validity.

If you do not submit your Statement of validity, you can enrol in the programme with condition, but you must present this document within 6 months of the beginning of the programme. If you do not provide the above-mentioned mandatory document by the deadline, you are placed on hold and cannot progress in your studies until you actually present this document.

If you are a non-EU national, you are required to comply with the norms on entry visa and residence permit. You have to submit:

- Student Visa type D for participants who are non–EU citizens residing abroad;
- Valid residence permit for non-EU citizens residing in Italy.

Politecnico di Torino reserves itself the right to check the truthfulness of the declarations included in self-certificate sent by the applicants (pursuant to Article 46 of DPR. no. 445 of 28 December 2000) and Politecnico excludes them from the ranking list in the event of false declarations.

ART. 7 (Student assessment and final qualification)

STUDENTS' OBLIGATIONS

The Specializing Masters Programme requires your full time commitment. You are requested to attend activities for at least 90% of the programme.

Absences for more than 10% of total classroom hours will lead to exclusion from the Specializing Master programme.

Withdraw from the programme must be put in writing.

For the purpose of obtaining the Specializing Master's degree, the Master Director will also evaluate the student's participation in the activities and the appropriateness of his/her behaviour.

Detailed rules about the exams will be provided during the opening day.

You cannot be simultaneously enroled in a Specializing Master's programme and in another university programme.

EVALUATION METHOD

At the end of each course, you have to take an exam consisting in a written evaluation test, in a work group, in a paper presentation or in a mix of the previous types. At the end of the programme, participants make a final presentation (dissertation of their project work conducted during internship) and are assessed for it.

QUALIFICATION

Upon completion of the programme, participants who regularly attended the activities and earned 80 ECTS (required for graduation), are awarded the "SpacE Exploration and Development Systems" 2nd level Specializing Master's diploma by Politecnico di Torino. The diploma will be issued in Italian.

If, at the end of the Specializing Master's Programme, you have not passed all the exams included in your Study Plan you can get a Certificate of Attandance and a Transcript of Records with the list of the exams that you have passed with grades, dates, credits and scientific disciplinary field.



ART. 8 Participation and enrolment fee

The participation fee is 3.000,00 Euro (three thousand/00) + 21,00 Euro (twentyone/00)¹ for the enrolment fee (Premium for accident insurance $5,00 \in +$ Enrolment revenue stamp $16,00 \in +$).

The total amount shall be paid to Politecnico di Torino according to the following instalments:

- 1.000,00 Euro (one thousand/00) advance fee by the date defined by Politecnico as the deadline for
 accepting the offer of admission to the Specializing Master's programme. You will receive the advance
 fee payment request in the same day of the publication of the selection outcomes. You will be given a
 week to proceed with payment. This payment is mandatory to confirm your participation in the
 Specializing Master's programme; failure to send payment within the aforementioned terms is
 considered as final renunciation to the programme;
- 2.000,00 (two thousand/00) Euro + 21,00 Euro (twentyone/00) at the time of enrolment.

The participation fee and the enrolment fee can be paid through the Apply@polito platform.

Your advance fee (1.000 Euro) can be reimbursed only in the following cases:

- if the Italian Embassy does not issue your Visa (for extra-EU citizens only);
- if the programme does not start, which happens only if the minimum number of participants is not reached.

Enrolling in the programme you accept any obligation and charge related to the payment of the participation and enrolment fee.

If you withdraw from the programme or are excluded from it, you will not be reimbursed your participation fee and enrolment fee under any circumstances and furthermore you will be requested to pay the whole amount of the participation fee.

The issue of the Diploma of the 2^{nd} level Specializing Master's programme in SpacE Exploration and Development Systems requires the payment of a revenue stamp.

Participation sponsored by Third Parties

If your participation in the programme is sponsored by Third Parties (payment of one or more instalments), it will be processed as follows:

- the sponsor must complete and submit the form available at https://didattica.polito.it/master/home/it/finanziamento-quote-per-il-dipendente
- after the end of the admission process, the sponsor will receive a message with:
 - the list of admitted sponsored candidates
 - payment methods.
- The 2nd level Specializing Master's Programme in "SpacE Exploration and Development Systems" is included in the course catalogue of Politecnico. Therefore, participation and enrolment fees are VAT exempt (Article 4 of DPR 633/72). Upon payment, Politecnico di Torino will issue a payment receipt.

In case of participations sponsored by Third Parties, Politecnico di Torino may provide for exceptions from the provisions related to the number of instalments and to the deadlines scheduled for the payment of the participation and enrolment fee.

¹ The insurance premium may change due to new rules adopted by Edisu and to the stipulation of an insurance contract.



If you are enrolled in the 2nd level Specializing Master's Programme in "SpacE Exploration and Development Systems", including if you are sponsored by Third Parts, you are subject to the rules and provisions of the Tuition Fee Guide concerning failure to pay or late payment and hold on academic progress.

The programme will start only if the minimum number of participants is reached.

ART. 9 (Scholarships)

Politecnico di Torino offers to SEEDS programme's participants the opportunity to benefit of 7 scholarships in the gross amount of 5.000,00 Euro (five thousand/00), also thanks to the support offered by "Agenzia Spaziale Italiana", that makes available 4 of them.

In order to be eligible for these scholarships, applicants must be admitted to the 2nd level Specializing Master's programme in "SpacE Exploration and Development Systems" a.y. 2020/2021.

Applying for admission to the 2nd level Specializing Master's programme in "SpacE Exploration and Development Systems" a.y. 2020/2021 you will also apply for the scholarships awards.

Scholarships are awarded by the Selection Committee to the 7 top students on the ranking list.

The Committe will award the ASI scholarships to the top 4 students and the other scholarships to the students from the 5th to 7th position of the ranking list.

Scholarship recipients are required to attend at least 90% of the programme (including lectures and training activities) in order to keep receiving their scholarship.

At the end of the selection process, the list of the scholarship recipients will be published on the Politecnico website on the "Selection outcomes" page.

Scholarship recipients will have to confirm their acceptance through a declaration form. This form will be published on the website. It must be filled in and sent by email (master.universitari@polito.it) within the deadline that will be communicated (generally within 7-10 days).

In case one or more candidates will not confirm the acceptance within the given deadline, the scholarship will be re-assigned to students on the reserve list according to their position in the list.

The candidates placed on the reserve list will be contacted only if a scholarship winner will not confirm. In this case, a new deadline will be assigned.

The gross amount of the scholarships is 5.000,00 Euro*.

Payment of the scholarship is made in 11 instalments. The first instalment is not paid at the moment of arrival at Politecnico, but at the end of the month following the enrolment.

Payment of the scholarship and the participation to the 2nd level Specializing Master's Programme will be interrupted in case of irregular attendance of classes or insufficient results.

The scholarship may be subject to IRPEF taxation because it shall be considered as income equivalent to that of an employee. In order to establish the correct tax category, the student will therefore be required to fill out the form "Modulo detrazioni IRPEF" provided by the administrative offices of Politecnico di Torino.

Politecnico di Torino reserves itself the right to offer other scholarships or excellence awards addressed to the SEEDS programme's participants in case of further availability of funding.

^{*} around 400 Euro net per month



ART. 10 (Competent office)

The competent office is the Office of Specializing Master's Programmes and Lifelong Learning of Politecnico di Torino.

For any inquiries or additional information, please contact:
Office of Specializing Master's Programmes and Lifelong Learning
Corso Duca degli Abruzzi, 24 - 10129 Torino (ITALY)
e-mail: master.universitari@polito.it

ART. 11 (Processing of personal data)

In accordance with the General Data Protection Regulation (EU Regulation 2016/679) and the "Code regarding the protection of personal data" (Legislative Decree No. 196 of 30th June 2003 and further amendments) personal data are processed by Politecnico di Torino exclusively for the selection and enrolment process in pursuit of the university aims and in accordance with the transparency purposes imposed by the law. The processing of personal data is based on the principles of correctness, lawfulness and relevance of purposes. More information on the processing of personal data is available at: https://didattica.polito.it/privacy/

The Data Controller is Politecnico di Torino, represented by the Rector, with statutory seat in Corso Duca degli Abruzzi, 24-10129 Torino.

You can contact the Data Controller at politecnicoditorino@pec.polito.it (certified e-mail)

For further information and inquiries write to privacy@polito.it

You can contact the Data Protection Officer (DPO) of Politecnico di Torino for inquiries on the processing of your personal data and your rights at: dpo@polito.it; dpo@polito.it; dpo@polito.it; dpo@polito.it; dpo@polito.it; dpo@polito.it; dpo@polito.it; dpolito.it; dpolito.it; dpolito:dpolito.it; dpolito:dpo

ART. 12 (Final provisions)

- 1. The programme will start only if the minimum number of participants is reached.
- Communication with candidates will take place primarily through the "Apply@Polito" platform.Specific communications might be sent via email using the contact details provided by candidates during registration on the platform.
- 3. Politecnico does not take any responsibility in case of unavailability of recipients and for loss of communications due to inexact indication of a candidate's email address or telephone number or due to delay or failure to notify changes to the contacts provided during registration.
- 4. This Call is published on the online University Bulletin available at https://www.swas.polito.it/dotnet/albo online/. The same can be found on https://didattica.polito.it/dotnet/albo online/. The same can be found on https://didattica.polito.it/master/