

Call for Doctoral positions at the

PhD Programme in

Materials, Mechatronics and Systems Engineering

34th Cycle – First call

ACADEMIC YEAR 2018/2019

N.B. Please note that only the Italian version of the present call issued by Rector's Decree no. 398 of 25.05.2018 is legally binding; the English version is provided for information only

Art. 1 – SUBJECT OF THE CALL

The University of Trento opens the call for position for the 34th Cycle (Academic Year 2018/2019) of the Phd Programme in "Materials, Mechatronics and Systems Engineering".

The subsequent publication of a second call for applications with positions covered by research fellowships (*Assegni di ricerca*) is foreseen; all positions in the second call will be on specific topics. Applications for the second call will also be accepted by the participants of this first call, but those who will be winners both in the selection of the first call and in that of the second, will be automatically removed from the first since the winnings on the second call will be considered the first choice for the candidate and therefore binding.

The number of postitions available for selection in the present call is as follows:

	Research Area A: Materials Science and Engineering		Topics of reserved scholarhips ¹
	University of Trento scholarships	5	
Positions	Postitions without scholarship	1	
	No. of positions	6	
	Supernumerary positions (see art. 7)	1	

	Research Area B: Mechatronics, Electronics and Operational research		Topics of reserved scholarhips
	University of Trento scholarships	2	
Positions	University of Trento and Department of Industrial Engineering	2	 B1 - Development of methods and tools for the design and intelligent control of robotic systems. B2 - Human-robot interactions based on mirroring mechanisms: human-vehicle collaboration in a driving simulator
	Department of Industrial Engineering	1	B3 - Distributed control algorithms for a team of service robots
	Postitions without scholarship	1	
	No. of positions	6	
	Supernumerary positions (see art. 7)	1	

The scholarships for specific research topics (reserved scholarships) are conditional on execution of a particular research topic for which specific skills are required. Candidates interested in one or more of these scholarships must carefully check the topic and the requirements listed at the selection webpage. Also candidates selected by special committees for admission related to specific international mobility programmes in which the University of Trento participates, may be admitted to the 34th Cycle on additional

Deadline for application	August 22, 2017, hrs. 04.00 PM (Italian time, GMT +2)
Duration	three years
Start of the Academic Year	November 1, 2018
Selection website	http://www.unitn.it/en/ateneo/1960/announcement-of-selection
PhD School website	http://www.unitn.it/drmmse/ (information on the programme, admission to subsequent years and to final examination)
Rights and duties of doctoral students	http://www.unitn.it/en/ateneo/52919/rights-and-duties-of-doctoral- students
Doctoral scholarships	http://www.unitn.it/en/servizi/1937/doctoral-scholarships

¹ Reserved scholarships can only be assigned to those candidates who will ask for and obtain the specific eligibility.

positions, as described on the selection website.

Translation of Attachment no. 1 to Rector's Decree no. 398 of 25.05. 2018

Areas of specific interest:

Materials Science and Engineering:

- Biomaterials and biomedical technologies
- Biotechnologies and agro-food technologies
- Nanotechnologies and nanomaterials
- Surface engineering
- Structural materials, durability and lifetime prediction
- Net-shape materials
- Materials for energy and environment
- Materials and technologies for cultural heritage
- Functional materials
- Materials and technologies for food industry

Mechatronic and Mechanical Systems:

- Intelligent manufacturing
- Dynamics of mechanical systems for aerospace applications
- Intelligent vehicles and robotics
- Automated supervised driving for intelligent vehicles and transportation systems
- Human sensory-motor modelling and rehabilitation
- Virtual, physiological and computational neuromuscular human models

Electronic and Integrated Microelectronic Systems:

- Techniques and systems for energy parameter measurement
- Sensor networks
- Embedded systems design
- Sensors, detectors and microsystems
- Microelectronic technologies

Operational Research:

- Constrained optimization problems
- Decision supports models and systems
- Project management
- Web site evaluation
- Trusted computing

Italian Ministry Scientific Areas: <u>http://www.unitn.it/en/ateneo/1904/doctoral-programme-in-materials-mechatronics-and-systems-engineering</u>

Increases in positions and scholarships or other forms of financial support will in any case be possible up to the day before the assessment of qualifications. All the new available positions will be posted solely on the selection website.

N.B.

- a. The dates of the selection and all selection results (interim and final), the possible exclusion from the selection for incomplete application (art. 3), the exclusion for foreign qualification not recognized as suitable (art. 2 c.3), and any general advices will be published only on the selection webpage; the candidates will be identified through the application ID. The publication on the website is to all intents and purposes valid as official notification.
- b. Without exception, all possible communication from the University of Trento to applicants will be managed via e-mail to the email address specified in the application online. Candidates are advised to check their mail box regularly and keep the Doctorate Office S&T (<u>phd.office-st@unitn.it</u>) promptly informed of any change of their email account.

Art. 2 – ADMISSION REQUIREMENTS

- 1. Applications for doctoral positions are accepted from applicants, regardless of gender, age and nationality, who hold:
 - a. an Italian "Laurea Magistrale", according to the Ministerial Decree no. 270 of 22.10.2004 and subsequent amendments, or
 - b. an equivalent Italian university degree (previous regulations in force, "specialistica", AFAM), or
 - c. an equivalent foreign degree (*Master's degree*) obtained at an officially acknowledged academic institution, valid for admission to PhD studies in the Country of issue (except for substantial differences) and similar (duration and level) to the Italian degree, recognized as equivalent by the Admissions Committee for the sole purpose of access to the present Phd Programme².
- Applications are also accepted from students expecting to obtain the necessary degree by October 31, 2018. Admission to the Doctoral Programme for successful applicants who have not yet graduated will be "conditional" and the applicant will have to submit to the Doctorate Office S&T (via email to: phd.office-st@unitn.it) by November 6, 2018, on penalty of exclusion, awarding certificate or a self-declaration (by using Annex A).
- 3. Applicants with a foreign qualification that has not been officially recognised as equivalent³ to an Italian degree (*Laurea Magistrale/Specialistica/vecchio ordinamento*) will be considered as requesting equivalence in their application, attaching the necessary supporting documents. The eligibility of foreign academic degrees is assessed by the Admissions Committee, following the rules in force or the international treaties on recognition of academic qualifications. The Admissions Committee may require the applicant to provide additional documentation if deemed necessary for the purpose of assessing the suitability.

Art. 3 – APPLICATION PROCEDURE

- The application⁴ must be completed and submitted by hrs. 04.00 PM Italian time (GMT +2) of August 22, 2018, solely by the online system: <u>http://www.unitn.it/en/apply/dott.</u> Applicants who do not have an account at the University of Trento must register in advance at⁵: <u>http://www.unitn.it/account</u>.
- 2. The application is subject to the payment of an application fee non-refundable amounting to € 15 to be paid by credit card according to the instructions given in the appropriate section of the online application. The application online can be saved and modified several times until the submission. Afterwards it can no longer be changed.
- 3. It is the sole responsibility of the applicant to verify and submit with correct closure the online application (ensuring reception of the email notification). The University refuses any liability for all applications not properly submitted by candidates. The online application is considered to be a self-declaration of personal data and qualifications with full legal effect.
- 4. During the filling out of the application online candidates must choose which Research area(s) (max. 2, specifying the order of preference) they are interested to apply for. If a candidate is short-listed in more than one Research area, he/she will be enrolled in the research area that was selected as first choice in the application online and deleted from the other ranking. Candidates who select more than one Research area in the application online, must attach a statement of purpose and a research project for each area.

<u>5, MANDATORY ATTACHMENTS</u> (failure to upload one or more mandatory attachments results in automatic exclusion from the selection)

1) Identifying document (ID):

• a copy of the applicant's valid **identity card** (only EU citizens) or **passport** (extra EU applicants), in particular of the pages reporting his/her photograph, personal data, number, place and date of issue, expiry date and signature.

2) Academic degree for admission to PhD:

Italian qualification:

² Details at: <u>http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/qualifiche-del-sistema-universitario.aspx</u>,

³ For further information see at <u>http://www.cimea.it/en/servizi/procedure-di-riconoscimento-dei-titoli/procedure-di-riconoscimento-accademico-dei-</u>

titoli.aspx ⁴ The candidate can chose either Italian or English to fill in the application online.

⁵ Candidates are advised to register well in advance of the deadline as the issue of the username and password (sent via email), necessary to enter UNITN's online services, may require up to 2 working days.

Translation of Attachment no. 1 to Rector's Decree no. 398 of 25.05. 2018

<u>already obtained:</u> a self-declaration, in accordance with Presidential Decree art. 46 no. 445 of 28.12.2000 and subsequent amendments, declaring the possession of a degree (art.2 of this Call), "*Classe di Laurea*", award date, issuing University, final grade, examinations taken, grades and credits obtained (by <u>using Annex A</u>); graduates from the University of Trento may only declare the place and the date of award as the other information can be collected ex officio; to be obtained: a self-declaration, in accordance with Presidential Decree art. 46 no. 445 of 28.12.2000 and subsequent amendments, declaring the possible award date, issuing University, "*Classe di Laurea*", examinations taken, grades and credits obtained (by <u>using Annex A</u>); future graduate of the University of Trento may only declare the place and the foreseen date of award as the other information can be collected ex officio;

• foreign qualification⁶:

<u>already obtained:</u> copy of the academic certificate accompanied by a list of exams with their credits and grades and, if available, the Diploma Supplement⁷ / transcript of records or Declaration of value⁸ or Rector's Decree of equivalence⁹; to be obtained:

to be obtained:

- a certificate of enrolment with a list of the examinations successfully passed and marks and credits obtained in each examination; if this document is not in English, the applicant must provide, in the same file, a translation of the same duly undersigned;
- a statement declaring that the student will complete his/her degree by October 31, 2018.

N.B.: if the university studies carried out abroad are divided into first and second level, the Bachelor's degree and the list of exams taken for the achievement of the relative degree (academic transcript of records of Bachelor's) should also be attached.

- 3) curriculum vitae et studiorum (in Italian or English), preferably using the Europass format: <u>http://europass.cedefop.europa.eu/en/documents/curriculum-vitae ;</u>
- 4) summary of the Master's thesis in English explaining the reasons for the choice of the subject, the research methodology and the results obtained (max. 4 pages);
- 5) statement of purpose in English (max. 3000 characters, including spaces), motivating the applicant's research interest in one of the Phd Programme's research field.
- 6) a description of the research project (max. 4 pages) within a research field of the Doctoral Programme, preferably on one of the research subjects of the 34th cycle listed at the selection website. Candidates applying for scholarships on reserved topics must attach a research project on that specific subject; during the interview the specific eligibility to this subject will be assessed. Candidates who have been awarded a scholarship for a reserved topic must accept it.

6. OPTIONAL ATTACHMENTS:

- list of research outputs;
- any certificates attesting the knowledge of foreign languages;
- any other documents useful to assess the research skills of the applicant (prizes, scholarships, postgraduate research and work activity, recommendation letters, etc.)
- up to two (2) names of contact persons (referees, experts in the fields of the PhD Programme members of universities or national and international research institutions), with details of their e-mail addresses and phone numbers.
- The University will accept any additional documents to the submitted application if sent by email to <u>ateneo@unitn.it</u> (Subject: "Application ID - Applicant's Surname and Name – PhD Programme in Materials, Mechatronics and Systems Engineering – 34th Cycle, First call - Supplement to application") by August 22, 2018, hrs. 04.00 PM (GMT +2) Italian time. Additional documents submitted by different means will be disregarded.
- 8. Only documents in English, Italian, French and Spanish will be taken into consideration for the selection by the Admissions Committee; for all other languages it is compulsory to attach a translation into English

⁶ It is in the interest of the applicant to provide all information relevant for the assessment, especially if the country where the qualification was obtained has an education system not comparable to the Italian one.

⁷ The Diploma Supplement accompanies a higher education diploma, providing an improvement in international "transparency" and apromotion of the academic and professional qualifications obtained (diploma, degrees, certificates, etc.). The Diploma Supplement must be issued by the same institution that issued the qualification. Further information at http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/diploma-supplement.aspx and http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/diploma-supplement.aspx and http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/diploma-supplement.aspx and http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/diploma-supplement.aspx and http://www.cimea.it/en/servizi/il-sistema-italiano-di-istruzione-superiore/diploma-supplement.aspx and http://www.cimea.it/en/servizi/incomscimento-dei-italiano-di-istruzione-superiore/diploma-supplement.aspx

⁹ Delivery of the Diploma Supplement, Declaration of value or decree of equivalence, optional at the application stage, will be mandatory for the

winners at the time of actual enrolment.

signed by the candidate. The attachments required at previous points 5.4, 5.5 and 5.6 must be submitted in English by all applicants.

9. All applicants are admitted to the selection procedure <u>conditionally upon ascertainment that they fulfill the admission requirements</u>. The University of Trento has the right to verify the documents delivered pursuant to articles 71 et seq. of the Presidential Decree no. 445 of 28.12.2000. <u>The University can at any time</u>, even after enrolment and upon justified reasons, decide the exclusion of candidates lacking the requirements specified in the present call.

Art. 4 – EVALUATION OF APPLICATIONS

- 1. The evaluations is made by an Admissions Committee for access to the PhD Programme appointed by the Rector upon advice of the PhD Programme Committee, in accordance with the University doctoral regulations. The Committee sets the evaluation criteria during the preliminary meeting.
- 2. The selection procedure is designed to ensure, comparatively, the knowledge and aptitude of the candidates to carry out research in areas related to the PhD programme and the chosen Research area/s. The selection is made on the basis of the assessment of:
 - the applicant's qualifications according to previous art. 3
 - an interview. The oral examination is designed to assess the candidate's basic knowledge about the Doctorate scientific areas, specifically to that referred to in the research project, to discuss past research and professional experience, and qualifications declared. The level of knowledge of English will also be assessed. In order to be allowed to oral examination the candidate must provide a valid ID/passport with photo.

Applicants residing or domiciled abroad, or otherwise unable to proven reasons to take the interview in person, may be authorized – upon request – to conduct the oral examination in another seat by video -conference. The Committee will guarantee that all the regularity requirements are fulfilled during the examination (verifying the candidate's identity and the accuracy of the interview).

- 3. Applicants who wish to be eligible for the reserved scholarships must make an explicit request to the Admissions Committee before the interview at the time of identification. Competences on the specific subject of the reserved scholarship/s will be assessed during the interviews of interested applicants.
 N.B.! The choice made by the candidate to compete also for the reserved scholarships implies a preference on his/her part for the allocation of that specific scholarship with respect to the others.
- The Admissions Committee may assign each candidate 120 points as follows:
 60 points: assessment of qualifications: up to 30 points for the research project and up to 30 for the other qualifications
 60 points: interview.
- 5. Candidates obtaining a minimum score of 36/60 for the assessment of qualifications will be admitted to the oral examination. The <u>interview</u> is successfully passed with a minimum score of 36/60. Applicants obtaining an overall score of 72/120 will be short-listed.
- 6. At least 20 days before the date of the examinations, time and location of the examinations will be published on the selection website.

Art. 5 – RANKINGS

- 1. At the end of the selection procedure the Admissions Committee draws up one ranking for each Research area.
- 2. Scholarships are assigned to short-listed applicants following:
 - a) the position in the ranking;
 - b) for reserved scholarships, the eligibility of the applicant for that specific scholarship.
- 3. The non-allocation of scholarships on reserved topics concerning point b) will result in the reduction of the available positions. With reference to each Research area, should any positions and/or scholarships free or reserved remain, these are not assigned to candidates in the other ranking.

Art. 6 - ADMISSION TO THE DOCTORAL PROGRAMME AND ENROLMENT

- 1. Short-listed applicants are admitted to the PhD Programme according to their place in the final rankings until all available places in each Research area have been filled. If an applicant is short-listed in more than one Research area, he/she will be enrolled in the one that he/she selected as first choice in the online application and deleted from the other ranking. The applicant who has been awarded a scholarship on a specific reserved topic must accept it. The renunciation of the reserved scholarship implies the exclusion of the applicant from the right to enrol in the PhD programme. Candidates who will be winners both in the first and in the second call (Departments of Excellence) will be automatically removed from the ranking of the first, since the winnings on the second call will be considered as first choice for the candidate and therefore binding.
- 2. Should two candidates obtain the same score, as regards the awarding of the scholarship, the candidates' economic situations shall be the deciding factor, in accordance with the criteria established by the Italian Prime Minister's Decree of 09.04.2001 and subsequent amendments and integrations. For positions without scholarships, the younger of the two candidates will be selected.
- 3. Admitted applicants must send the enrolment following instructions at <u>http://www.unitn.it/en/ateneo/1928/enrollment-1-2-3-year</u>:
 - **within 8 days** starting form the next day of the publication of the final rankings on the Selections website for **positions with scholarships**;
 - within 14 days starting form the next day of the publication of the final rankings on the Selections website for positions without scholarships.

N.B.! Admitted applicants with a <u>foreign qualification</u> must deliver the Diploma Supplement (qualifications obtained in countries of the European Research Area) or the Declaration of Value together with the copy of the final Diploma with a complete transcript of records, translated and authenticated by the Italian diplomatic representatives in the country of issue; the Declaration of Value may be replaced by a certificate issued by ENIC-NARIC¹⁰ centers containing all the information necessary for the assessment of the qualification. If these documents are not available at the time of the acceptance of the position, they must be delivered **by November 6, 2018**. Their non-delivery may result in exclusion from the Doctorate.

- 4. Please note that the enrolment must include the payment of stamp duty and, where applicable, the payment of the "provincial tax for the right to higher education" TDS¹¹. To date there are no fees charged to doctoral students to access courses and the frequency thereof, with the exception of the aforementioned annual provincial tax for the right to study (TDS).
- 5. Admitted applicants **who do not enrol within the above mentioned deadlines** will lose their right to enrol and their places will be offered to the next applicants on the relevant ranking.
- 6. If a successful applicant withdraws before the beginning of the course (November 1, 2018), the next applicant on the reference ranking will be offered the place. The latter must submit his/her enrolment **within 4 days** starting from the day after the day in which the communication from the Doctorate Office S&T is sent.
- 7. If a successful applicant withdraws or is excluded after the beginning of the courses and during the first quarter of the first year (three months), the PhD Programme Committee may decide to fill the vacancy with the next applicant on the reference list.

Art. 7 – SUPERNUMERARY POSITIONS

- 1. According to art. 20, par. 3 of the University Regulations for Doctoral Programmes, no more than **2** supernumerary applicants may be admitted without scholarship paid by the University, after passing the selection procedure, if they fall under one of the following cases:
 - a) shortlisted foreign candidates who are granted scholarships by other entities;

¹⁰ <u>http://www.enic-naric.net/</u>

¹¹ Please note that the total amount of TDS + duty stamp must be paid only by credit card following the instruction. Page http://www.unitn.it/en/ateneo/1931/education-tax-tds-and-revenue-stamp provides information on exemption form TDS.

Translation of Attachment no. 1 to Rector's Decree no. 398 of 25.05. 2018

- b) shortlisted candidates from countries with which a specific inter-governmental agreement has been signed, and with which an ad-hoc agreement with the University is then made, without the University of Trento being required to assume any financial obligations;
- c) research fellows (*Assegnisti di ricerca*) whose contract lasts for a minimum of 24 months as from the starting date of the Programme and researching a subject relevant to the PhD Programme; such relevance has to be determined by the Doctoral Programme Committee;
- d) Italian civil servants or under Italian public law regime. Admission is subject to placement on leave under Art. 2 of the Law of 13.08.1984 no. 476 and subsequent amendments.
- 2. Short-listed applicants who wish to assert their requirements for supernumerary positions shall request, by submission of appropriate documentation proving their status via e-mail to phd.office-st@unitn.it, such admission within 8 days starting form the next day of the publication of the ranking lists. Supernumerary admission is disposed within the limit of the number of supernumerary positions listed in the specific Research Area in art. 1.
- 3. After verification of the documents referred to in par. 2, applicants who will be admitted on supernumerary positions will receive an email notification by the Doctorate Office S&T (<u>phd.office-st@unitn.it</u>) and must deliver their acceptance within the deadline specified in the email text itself.
- 4. Any candidates selected by special committees for admission related to specific international mobility programmes in which the University of Trento participates, may also be admitted to the 34th Cycle on additional positions with respect to the quota specified in art. 1.

Art. 8 – INTELLECTUAL PROPERTY RIGHTS ON RESEARCH RESULTS AND PUBLICATIONS

1. Without prejudice to the Italian legislation on copyright (Legislative Decree no. 633/1941 and suc. amendments), intellectual and industrial property rights on the results eventually achieved by the student, including, but not limited to, software, patentable industrial inventions or not, know-how, models, data and data collection, are regulated in accordance with applicable laws and University regulations and, if necessary, according to the provisions in the individual agreements with universities, companies or other institutions involved.

Art. 9 – PERSONAL DATA

- 1. The University of Trento, abiding by Legislative Decree 196/2003 and subsequent amendments, shall use the personal data of the applicants only for the purpose of the selection procedures and for institutional reasons.
- 2. Participation in the present selection entails, in observance of the above-mentioned law, that the applicant allows the University of Trento to publish his/her personal data concerning the results of the selection procedure on the University website.
- 3. Data are treated by the University of Trento, via Calepina, 14 38122 Trento (Italy).

Art. 10 – REFERRAL RULES

- 1. For matters not explicitly mentioned in the present call, refer to Law no. 398 of 30.11.1989, art. 4 of Law no. 210 of 3.07.1998 as amended by art.19, par. 1, of the Law no. 240 of 30.12.2010, to Ministerial Decree no. 45 of 08.02.2013 and to the University Regulations for Doctoral Programmes issued by Rector's Decree no. 742 of 28.10.2016, to the Code of Ethics of the University of Trento, to the Internal Regulations in force of the Doctoral Programme in Materials, Mechatronics and Systems Engineering, and to the other relevant provisions contained in the current legislation.
- 2. This call, accompanied by its translation into English, is published on the University website, on the website of the Italian Ministry of Education and on Euraxess. Any changes or additions to the call will be made available only on the selection website specified in art. 1.

On behalf of The Rector

The Head of Education and Student Services Dott. Paolo Zanei

		clara					
DEC	GR	EE	CE	RT	FI	CAT	۲E ¹

(Article 46 - letters I, m, n - D.P.R. 28 December 2000, No. 445)

The undersigned		
place of birth (<i>city+country</i>)	date	of birth
	o code, city, country)	
	e – mail	
aware of the penal sanctions pursuant to making mendacious declarations	Article 76 of the Italian Presidential Decree no. 4-	45 of 28.12.2000 for falsifying documents and
	DECLARES	
A) TO HAVE GRADUATED	(degree for admission to PhD, click the	e corresponding box):
Type of degree Laurea	a magistrale/specialistica	
Italian	University degree of the previous regula	ations in force (vecchio ordinamento)
in:		
Specialization (Classe di laurea I	D code):	
ondd /mm /yy	from University of ²	
(town	Italy) with mark	out of
AND TO HAVE PASSED THE FO	DLLOWING EXAMS (fill out the follow	ving Section C)
	Alternately:	
	ADUATED and to be aware that adm sion of the degree diploma/certificate by	
Graduating in:		
Specialization (Classe di laurea I	D code):	
University of:		in Italy.
Expected graduation date:		

AND TO HAVE PASSED THE FOLLOWING EXAMS (fill out the following section C)

¹ To be noted: self-declarations can be delivered only if concerning facts and information which can be verified by an Italian public administration.

In case of non-European citizens this is possible only if they are in possession of a valid stay permit, which must be attached to the declaration. - The self-declaration shall provide all the information required, and data related to the mark, date and place of obtainment of the degree are

mandatory;

The self-declaration shall be duly signed and dated.
 ² Graduates of the University of Trento must only declare the date of awarding of the degree; other information will be collected automatically.

SECTION C: List of exams taken (titles, marks, credits - if available, and dates are mandatory):

Course Title	Mark/Out of	Number of credits	Date

						l also	declare							
to ha	ive	graduated	with	an	Italian	Universit	y first le	evel	degree	(Laure	ea/bache	elor's	degree)	in
						on	_dd/	mm	/уу		from	Univ	versity	of
							town							
(Coun	itry)						wi	th m	nark			out o	f	
Date a	and	place,					Sigr	natui	re of the o	declara	nt			

This declaration is exempt from stamp duty, pursuant to Article 37 of the Italian Presidential Decree no. 445 of 28.12.2000.