



**POLITECNICO  
DI TORINO**

Scuola di Master  
e Formazione Permanente

Albo n. 362/2018

Call for applications  
for the 2<sup>nd</sup> level Specializing Master's Programme in  
“Photonics for Data Networks and Metrology”  
(1<sup>st</sup> edition)

Academic Year 2018/2019

(Annex “A”- Executive Decision of the Head of the Division of Student Affairs no. 232/2018)



## ART. 1

### Programme overview

The first edition of the 2<sup>nd</sup> level Specializing Master's Programme in "Photonics for Data Networks and Metrology" is offered for the academic year 2018/2019 in collaboration with INRiM (Istituto Nazionale di Ricerca Metrologica). The administrative seat of this Specializing Master's Programme is located at Politecnico di Torino – Office of Specializing Master's Programmes and Lifelong Learning ("Ufficio Master e Formazione Permanente").

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

The Scientific Advisory Board is composed of Prof. Vittorio Curri (Politecnico di Torino), Prof. Roberto Gaudino (Politecnico di Torino), Dr. Davide Calonico (INRiM).

The Programme Director is Vittorio Curri, professor at the Department of Electronic Engineering of Politecnico di Torino.

## ART. 2

### Training objectives, learning contents and organization of the activities

The purpose of the Programme is to give multidisciplinary knowledge and competence on photonics transmission and networking as well as on fundamentals of metrology and of time reference distribution on telecommunications infrastructure based on optical fiber transmission.

The Programme is aimed at students with different backgrounds: graduated in the ICT field and graduated from schools of Physics and Metrology, and will train hybrid professional figures who will be able to design and manage state-of-the-art photonic networks to support the ever-increasing IP traffic demands well as to distribute time references from and among metrology centers.

The 2<sup>nd</sup> level Specializing Master is a full time Programme of one academic year duration for a total of 69 ECTS; it will start in September 2018 and will end in November 2019.

Lectures will be held in English at Politecnico di Torino premises – starting in September 2018 and ending in June 2019. Lectures include classroom activities with academic and corporate teaching staff. The internship period will start in July/August 2019 and will end in October/November 2019.

The teaching Programme is organized as follows:

- courses: 32 weeks of full-time classroom activities (September 2018 – June 2019)
- internship: 8 weeks (250 hours) of on the job training at companies and/or research institutes in the photonic technologies field (July/August 2019 – October/November 2019).

**Table n.1 – Organization of the courses**

n.	Course	ECTS
1	Digital Communication	6 ECTS
2	Optical Transmission	5 ECTS
3	Photonic Devices	4 ECTS
4	Time and frequency metrology	5 ECTS
5	Ultrabroadband access networks	5 ECTS
6	Long-haul optical transport	4 ECTS
7	Photonic Networks	6 ECTS
8	Quantum Communications	4 ECTS
9	Photonics applications in metrology	4 ECTS
10	Time and frequency laboratory	6 ECTS
11	Security for ICT	4 ECTS



n.	Course	ECTS
12	Communications laboratory	6 ECTS
13	INTERNSHIP	10 ECTS

**ART. 3  
Admissions requirements**

The 2<sup>nd</sup> level Specializing Master's Programme is intended for Italian and foreign citizens. Applicants must hold a full degree (Master of Science degree/Laurea specialistica/Laurea magistrale) in one of the following fields:

- LM-27 Telecommunication Engineering
- LM-29 Electronic Engineering
- LM-25 Automation Engineering
- LM-32 Computer Engineering
- LM-17 Physics
- LM-18 Computer Science
- LM-44 Physics and mathematics for engineering
- LM-21 Biomedical Engineering
- LM-40 Mathematics

Upon specific and motivated request of the candidate, the Selection Committee will consider for admission also candidates that graduated in a field not listed above, if adequate supporting documentation will be uploaded, including official transcript(s) issued by the University of origin or self-certification, as specified in art. 4, containing the full list of all the exams, grades and course syllabi. These documents are required to testify that candidates own the scientific and cultural background knowledge requested to successfully attend the Specializing Master's Programme.

The Selection Committee will evaluate candidates who have not graduated yet upon condition that they will obtain the necessary degree within the enrolment deadline. In case they will not obtain the degree within the enrolment deadline, they will not be admitted to the Programme.

All candidates must prove to have a good knowledge of the English language, which must be certified by a language certificate included in the list of accepted certificates (see **Table n.2 - English language certificates** at the end of this article in order to know the required level and accepted certificates).

Candidates can be exempted from having the IELTS 5.5 certificates by providing a stamped declaration/certificate written on official letter headed paper, which certifies that:

- a) They have attended at least one school year at a high school 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".
- b) They 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 they have a higher qualification awarded by a higher education institution in which the medium of instruction is English. In both cases the school 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"



**Table n.2 – English language certificates**

Examination Board	Certificate	Minimum score accepted
ETS <a href="http://www.ets.org/toefl">http://www.ets.org/toefl</a>	TOEFL (Test Of English ad a Foreign language) - ibt	72
	TOEFL (Test Of English ad a Foreign language) - cbt	228
	TOEFL (Test Of English ad a Foreign language) - pbt	568
	TOEIC (Test of English for International Communication)	Listening: 400 Reading: 385 Speaking: 160 Writing: 150
Cambridge English Language Assessment ( <a href="http://www.cambridgeenglish.org/exams/">http://www.cambridgeenglish.org/exams/</a> )	Cambridge Preliminary English Test (PET)	Pass with Distinction
	Cambridge English First (FCE)	
	ADVANCED/CAE	
	PROFICIENCY/CPE	
	BULATS	-Reading & Listening: overall score 60 - Writing: overall score B2 -Speaking: overall score B2
IELTS ( <a href="https://www.ielts.org/">https://www.ielts.org/</a> )	IELTS (International English Language Testing System) – Academic or General training	5.5
Trinity College London ( <a href="http://www.trinitycollege.com/">http://www.trinitycollege.com/</a> )	Trinity ISE	ISE II
Pearson ( <a href="http://pearsonpte.com/">http://pearsonpte.com/</a> )	Pearson Test of English Academic	59
LCCI – EDI / Pearson ( <a href="http://qualifications.pearson.com/en/qualifications/lcci.html">http://qualifications.pearson.com/en/qualifications/lcci.html</a> )	JETSET	JETSET Level 5 or higher Reading: 50% Writing: 50% Listening: 50% Speaking: 50%
	ELSA (English Language Skills Assessment)	Reading, Writing, Listening and Speaking: B2 in all 4 tests
CaMLA ( <a href="http://www.cambridgemichigan.org/exams">http://www.cambridgemichigan.org/exams</a> )	Michigan ECPE (Examination for the Certificate of Proficiency in English)	
	Michigan ECCE (Examination for the Certificate of Competency in English)	
telc gGmbH ( <a href="https://www.telc.net/en.html">https://www.telc.net/en.html</a> )	TELC	Reading, Writing, Listening and Speaking: B2 in all 4 tests
AKS Unicert ( <a href="http://www.unicert-online.org/en">http://www.unicert-online.org/en</a> )	UNicert II	UNicert II

#### ART. 4

#### Admissions and Selection Procedures

The Specializing Master's Programme is open to a maximum of **25** participants.

Applications must be completed on-line by filling out the application form available on Politecnico di Torino website at: <https://didattica.polito.it/master/phonics/2019/apply>

Application forms must be submitted within **May 7<sup>th</sup>, 2018 at 11:59 a.m., CET**

**ALL** the following supporting documents must be attached to the application form on Politecnico di Torino website (in English or Italian only):

1. valid identification document (passport for NON-EU applicants)
2. curriculum vitae (cv must include the authorization to the processing of personal data – in compliance with Legislative Decree no. 196/2003);
3. list of exams of both Bachelor's and Master's degree Programmes (or equivalent):
  - for applicants with degree(s) obtained from a non-Italian University or from a private Italian University: 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.

or

- for applicants with degree(s) obtained from an Italian Public University: self-certification ("dichiarazione sostitutiva di certificazione" - Art. 46 DPR 28 December 2000, n. 445) in which applicants declare to have obtained **both a Bachelor's degree and a Master's degree** (or equivalent).

The self-certification must include: the name of degree, the name of the University, the date of degree conferral and the graduation final grade, the full list of all the exams passed and the grades obtained (this information is 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. Admission Request Form (available on the webpage of the Specializing Master's Programme [https://didattica.polito.it/master/phonics/2019/deadline\\_documentation](https://didattica.polito.it/master/phonics/2019/deadline_documentation))
5. Motivation letter (which should be no more than 750 characters in total, spaces included).

Failure to attach even one of the above mandatory documents will result in the exclusion from the selection process.

To be admitted to this Specializing Master's Programme, applicants must pass the selection procedure as described in the following; the final decision is taken by the Selection Committee composed of representatives from Politecnico di Torino and INRiM.

After the application deadline the Selection Committee will evaluate all the applications received and the attached documentation.

First, the Selection Committee will verify whether the applicants meet the academic requirements, have the necessary qualifications and will select those eligible to attend the Programme.

To fairly and properly rank applicants, the documentation attached to the on-line application form will be considered, assigning an overall maximum of **100 points**, according to the following criteria.

- Academic background (Master of Science degree final grade - in case of Master's degree conferred without final grade, or Master's degree not yet obtained, the average value of passed exams' grades will be considered-, grades obtained in each examination of the MSc degree, coherence of the MSc curriculum with Specializing Master's topic): maximum 40 points
- Prior experiences (thesis, internship, work, research projects) in the field of digital communications, photonic transmission and networking and time and frequency metrology (specified in the curriculum vitae): maximum 40 points
- Motivation letter: maximum 20 points

Candidates who will not satisfy all of the following items:

- satisfy all the requirements
- attach all the required documents
- reach the minimum score of 50 points

will be considered "not suitable" and they will not be admitted to the Programme.



The Responsible for the admissions administrative procedure is Mr. Alberto Pusceddu: Head of the Specializing Master's Programmes and Lifelong Learning Office at Politecnico di Torino.

#### **ART. 5 Selection Outcomes**

At the end of the selection process, a merit list will be published on the "Selection outcomes" page of the Specializing Master Programme's website.

The list will contain:

- applicants admitted to the Specializing Master's programme
- applicants on reserve list

Candidates, who attached all the required documents, who fulfills all the requirements, and who will reach the minimum score of 50 points will see their position in the list and their final score on the "Selection outcomes" page, where the official lists are published.

Please note that candidates who have not yet obtained the Master of Science degree will be provisionally accepted. In case they will not obtain the degree within the enrollment deadline they will not be admitted to the Programme.

#### **ART. 6 Enrolment**

Admitted candidates who accept the offer to participate in the Programme will have to enrol at Politecnico di Torino by the starting date of the Specializing Master's Programme.

Upon enrolment, participants who hold a degree from a non-Italian University 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, participants can turn in the "Diploma Supplement" instead of the "Dichiarazione di Valore".

Participants who are non-EU citizens and reside in Italy must submit a valid Italian residence permit.

Participants who are non-EU citizens and reside abroad must submit an Italian VISA for study purposes "type – D".

#### **ART. 7 Evaluation and qualification**

##### **STUDENT OBLIGATIONS**

The Specializing Master's Programme requires the participants a full time commitment. Attendance to the activities is mandatory for at least 80% of the Programme.

Absences will be allowed up to a maximum of 20% of total classroom hours. Absences for more than 20% of total classroom hours will lead to exclusion from the Specializing Master's Programme.

Withdrawal from the Programme must be put in writing.

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

Participation will be subject to performance evaluation throughout the Programme. Participants who fail 6 (or more) exams out of 12 will be excluded from the Programme.

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

It is not possible to be enrolled in a Specializing Master's Programme and in another University Programme at the same time.

##### **EVALUATION METHOD**

For each course participants will have to take an exam consisting in a written/oral or both evaluation test. At the end of the Programme the final presentation (dissertation of the project work) will allow to assess the student's skills.



## QUALIFICATION

After completing the Programme, participants who have regularly attended the activities and reached the total amount of 69 ECTS required for graduation, will be awarded the "Photonics for Data Networks and Metrology" 2<sup>nd</sup> level Specializing Master's diploma by Politecnico di Torino. The diploma will be issued in Italian.

### ART. 8

#### Participation and enrolment fee

The participation fee is 4.000,00 Euro (four thousand/00) + an enrolment fee (enrolment revenue stamp + premium for accident insurance) to be defined within the enrolment deadline; the total amount shall be paid to Politecnico di Torino according to the following installments:

- 1.000,00 Euro within the deadline which will be defined by Politecnico for participants to accept the offer for the Specializing Master's Programme
- 3.000,00 Euro + an enrolment fee at the time of enrolment

The participation and the enrolment fee can be paid by wire transfer through the "Apply@Polito" platform. In case of withdrawal or exclusion from the Programme the participation fee and the enrolment fee won't be refunded by Politecnico di Torino under any circumstances.

The Programme will start only if the minimum number of 10 participants required is reached.

FOR ANY INQUIRY 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](mailto:master.universitari@polito.it)

### ART. 9

#### Privacy policy and access to documents

The information provided for in Article 13 of the "Code regarding the protection of personal data" (Legislative Decree No. 196 of 30th June 2003) is available at: <https://didattica.polito.it/privacy/>.

The personal data included in the on-line application form are treated for the selection and enrolment process only; the data are used by Politecnico di Torino within the institution itself, and exclusively for the purposes of the institution: for this reason, personal data are shared with various offices within the University (to carry out the activities within their competence) without further notification to the applicants.

The personal data included in the on-line application form are also forwarded to INRiM by Politecnico di Torino for selection purposes.

Owner of the database is Politecnico di Torino, represented by the Rector, with legal seat in Corso Duca degli Abruzzi, 24-10129 Torino.

The person in charge of the student data is the Head of the Division of the Division of Student Affairs.

Access to all documents is allowed in the forms provided for by current Legislation.

### ART. 10

#### Final provisions

1. Communication with candidates will take place primarily through the "Apply@Polito" platform. Specific communications might be sent via email or SMS using the contact details provided by candidates during registration on the platform.
2. 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.
3. This Call is published on the online University Bulletin available at [https://www.swas.polito.it/dotnet/albo\\_online/](https://www.swas.polito.it/dotnet/albo_online/). The same can be found on <https://didattica.polito.it/master/>