

## PhD Program in Electrical, Electronics and Communications Engineering (EECE)

### Internal Rules and Regulations

This document lists the current internal rules and regulations of the Electrical, Electronics and Communications Engineering (EECE) Doctorate. These regulations are applied on top of all existing ScuDo regulations, and not as a substitution. The following topics are covered in this document:

1. Management and Committees
2. Student Evaluation
3. Admission Requirements
4. Awards
5. Training and External Activities
6. Traveling

## 1. Management and Committees

The EECE Doctorate management is supported by a number of committees and/or individuals, who specialize on specific topics. These committees are listed below, with a short description of each committee, and the list of members (as of 1<sup>st</sup> April 2023).

**Coordinator** email: [ieec.coordinatore@polito.it](mailto:ieec.coordinatore@polito.it)  
Stefano Grivet-Talocia, email: [stefano.grivet@polito.it](mailto:stefano.grivet@polito.it)

The Coordinator is delegated by the Academic Board for approving the external referees (for thesis assessment) and the examination board (for thesis defense and final exam). He is also in charge of approving all teaching collaborations of PhD candidates.

**Vice-Coordinators** email: [ieec.coordinatore@polito.it](mailto:ieec.coordinatore@polito.it)  
Roberto Gaudino, email: [roberto.gaudino@polito.it](mailto:roberto.gaudino@polito.it)  
Michele Goano, email: [michele.goano@polito.it](mailto:michele.goano@polito.it)

The Vice-Coordinators are delegated by the Academic Board for approving the external training activities and the external research activities.

**Secretary**  
Emilio Leonardi, email: [emilio.leonardi@polito.it](mailto:emilio.leonardi@polito.it)

**Administration** email: [ieec.segreteria@polito.it](mailto:ieec.segreteria@polito.it)  
Andrea Trinchera, email: [andrea.trinchera@polito.it](mailto:andrea.trinchera@polito.it) (DET + general handling)  
Mariapia Martino, email: [mariapia.martino@polito.it](mailto:mariapia.martino@polito.it) (DENERG only)  
Tiziana Marangoni, email: [tiziana.marangoni@polito.it](mailto:tiziana.marangoni@polito.it) (DISAT only)

**Student Representatives** email: [ieec.rapp.studenti@polito.it](mailto:ieec.rapp.studenti@polito.it)  
Fiorella Sibona, email: [fiorella.sibona@polito.it](mailto:fiorella.sibona@polito.it)  
Michele Quercio, DENERG, email: [michele.quercio@polito.it](mailto:michele.quercio@polito.it)

**Executive Board** email: [ieec.giunta@polito.it](mailto:ieec.giunta@polito.it)  
Stefano Grivet-Talocia  
Roberto Gaudino  
Maurizio Zamboni  
Michele Goano  
Ganmario Pellegrino  
Giuseppe Vecchi  
Alessandro Rizzo

The Executive Board supports the Coordinator in those strategic activities that require significant preparation and discussion before submission for approval to the Academic Board.

### Academic Board

The Academic Board is the main decision-making body of the EECE PhD Program, as required by current legislation. The Board includes about 50 members of high scientific profile and

representatives of the community of students and teachers of the PhD. The Board is renewed annually in anticipation of the ministerial accreditation of the Doctorate, according to the following criteria:

- a) The number of professors must be reasonably limited (to ensure participation and quorum at meetings) and adequate for the number of doctoral students. Approximately 50 are believed to meet these criteria, given the number now exceeding 250 concurrently active PhD students.
- b) The Board must guarantee a representativeness of each Scientific Disciplinary Sector (SSD) and of each Department involved in the course. There are currently 9 SSDs (FIS/01-03, ING-IND/31-32-33, ING-INF/01-02-03-04); the minimum number of representatives for SSD is equal to 3, the maximum number equal to 11 for the Electronics sector, which has the highest number of doctoral students. An attempt is made to maintain a certain proportionality between the number of PhD students and the number of representatives of each sector, without however forcing a binding numerical rule. There are three departments involved (DET with the majority of teachers in the Board and administrative staff, DENERG and DISAT). In addition, the INFN with three members (INFN is an affiliated body) and the CNR with one member are represented in the College.
- c) In order to participate in the Board, each member is required to be active in the Doctoral Program, both as a tutor of PhD students (active or recent), and as a professor of III level courses and/or member of commissions in which the PhD program has organized to its management structure (details available at [http://dottorato.polito.it/eet/en/regolamenti\\_dottorato](http://dottorato.polito.it/eet/en/regolamenti_dottorato)).
- d) Each member is also required to have values of their ASN indicators significantly higher than the threshold values required by the ministry for accreditation. The Doctoral School is responsible for verifying the indicators of the candidates to the Board before formalizing the application for accreditation.

The process for defining the Academic Board are as follows

- a) Well in advance of the ministerial deadlines for accreditation, the Coordinator initiates a survey with the various groups and departments through their representatives in the Executive Board.
- b) The Executive Board collects the indications and any new candidates, examines them and proposes them to the Academic Board.
- c) The Academic Board discusses the proposals according to the criteria described above and approves them, recording the results of the discussion and communicating to the Doctoral School the names to be included in the Board for accreditation.

**Teaching Activities Committee** email: [ieec.didattica@polito.it](mailto:ieec.didattica@polito.it)

[Carlo Ragusa](#)

[Franco Fiori](#)

[Stefano Grivet-Talocia](#)

[Francesco Bertazzi](#)

[Emilio Leonardi](#)

[Giuseppe Vecchi](#)

The Teaching Activities Committee maintains and updates the list of PhD courses offered by the Doctorate.

**Awards Committee** email: [ieec.awards@polito.it](mailto:ieec.awards@polito.it)

Michela Meo  
Fabio Pareschi  
Maurizio Repetto

The Awards Committee is responsible for the Students' evaluation in view of the assignment of the Awards during each Academic Year.

**Poster Day Committee** email: [ieec.posterday@polito.it](mailto:ieec.posterday@polito.it)

Paolo Bardella  
Paolo Giaccone  
Patrizia Savi

The Poster Day Committee takes care of all activities related to the organization of the annual Poster Day, including logistics, web site maintenance, poster collection, handling of reviewer reports and collection of poster evaluations. Finally, the Committee prepares and publishes the Annual Report.

**External Communications Committee** email: [ieec.comunicazione@polito.it](mailto:ieec.comunicazione@polito.it)

Maurizio Repetto  
Alex Minetto  
Alberto Tibaldi  
Fiorella Sibona  
Michele Quercio

This committee supports the Coordinator for the maintenance of the EECE web portal, and for all various external communications activities dedicated to the PhD candidates and to the general public.

**Benchmarking Committee**

Giovanni Ghione  
Carlo Novara  
Anton Proskurnikov  
Paolo Guglielmi  
Michela Meo  
Stefano Stassi

This committee supports the Coordinator in the benchmarking activities of the EECE PhD program in view of its placement with respect to similar PhD courses on the national and international scene. This commission prepares and annually updates appropriate documentation useful for the purposes of accreditation and periodic self-evaluation of the PhD program. The first convocation of this commission is scheduled for the month of April 2023.

**Stakeholders Committee**

Paolo Crovetto  
Radu Bojoi  
Roberto Gaudino  
Luciano Scaltrito

Paolo Bardella

This committee supports the Coordinator in managing a consultative committee of members external to the PhD (large and small/medium industries, both local and national/international, expert researchers and executives at national/international level). This committee meets annually to analyze the structure, organization and performance of the EECE PhD, and to provide guidelines for continuous updating and improvement. This commission prepares and annually updates appropriate documentation useful for the purposes of accreditation and periodic self-evaluation of the PhD program. The first convocation of this commission is scheduled for the month of April 2023.

### **Facebook**

The student representatives maintain a non-official Facebook group for informal exchanges between EECE PhD candidates. The group is available at the link

<https://www.facebook.com/groups/politoeecephdstudents>

## 2. Student evaluation

The EECE Doctorate adopts the official point system provided and managed by ScuDo for the evaluation of PhD Candidates. Evaluations are necessary for admission to second and third year, for admission to the final exam, and for the assignment of PhD Awards. Below, we describe the various indicators that are currently in use (please note that these definitions are consistent with the official ScuDo definitions, they are reviewed here just for convenience). All these indicators are clearly visible for both Students and Tutors on their “cruscotto” or “dashboard” (the personal page on the didattica.polito.it website).

### Training activities

- $H_{s,i}, H_{h,i}$ : **hours** of course  $i$  ( $s$ : soft,  $h$ : hard)
  - Hours of PhD hard skill courses are counted in full
  - Hours of M.Sc. hard skill courses count only 1/2
  - Hours of B.Sc. hard skill courses count only 1/3
- $E_{s,i}, E_{h,i}$ : **weight** that accounts for examination result. Hours are multiplied by the following factors
  - 1 if the student did not participate in the exam (i.e., only a participation certificate)
  - 4/3 if «pass» (equivalent to 18-24 over 30 points)
  - 5/3 if «pass with merit» (equivalent to 25-30 over 30 points)
- $D_s, D_h$  and  $H_s, H_h$ : Total training **points** and **hours** that are computed from the above as

$$D_h = \sum_i E_{h,i} \cdot H_{h,i}, \quad H_h = \sum_i H_{h,i}, \quad D_s = \sum_i E_{s,i} \cdot H_{s,i}, \quad H_s = \sum_i H_{s,i}$$

### Publications

- $N$ : total number of **exclusive journal publications**
  - $N = \sum_i N_i$
  - Only indexed journals (VQR-approved) in SCOPUS ([www.scopus.com](http://www.scopus.com)) or WOS ([www.webofknowledge.com](http://www.webofknowledge.com))
  - If  $k$  authors of publication  $i$  are Polito PhD students, then  $N_i = 1/k$  (other non-PhD-Student Authors do not count)
- $R$ : cumulative indicator of all publications – including also conference publications
  - $R = 50N + \alpha \sum_i P_i f_i$
  - For the EECE Doctorate:  $\alpha = 60$
  - $P_i$ : score of  $i$ -th publication according to Polito rules
    - Journals are classified in 4 quartiles
      - A:  $P_i = 1.0$ , B:  $P_i = 0.8$ , C:  $P_i = 0.5$ , D:  $P_i = 0.0$
    - For conferences, a standard score  $P_i = 0.5$  is used
  - $f_i$ : weight accounting for the number of authors  $n$ 

$$f_i = \left(\frac{1}{n}\right)^{\left(\frac{n-1}{n}\right)} \text{ if } n \leq 10, \quad f_i = 0.1 \text{ if } n > 10$$

### External research activities

- $R_e = d/5$ , where  $d$  is the number of days of your stay

## Poster Day

An integral part of the annual evaluation of PhD students is the Poster Day, the main event of the EECE Doctorate, which is held annually in the month of October. Each student prepares a poster and discusses it during the event with colleagues, faculty and invited guests in a friendly and collaborative atmosphere. The poster is evaluated by anonymous reviewers, and the results of this evaluation are considered as elements for the admission of students to the following academic year. Some recent editions of Poster Day have unfortunately been affected by the COVID19 pandemic. Discussions were conducted remotely, and posters were replaced by short presentation videos. Starting from 2020, all poster contributions and videos are collected in a website, which can be considered in all respects as an Annual Report for the EECE Doctorate.

## 3. Admission Requirements

### Official ScuDo requirements

- Admission to final exam at the end of the 3<sup>rd</sup> year
  - $N \geq 1, R \geq 50, H_s \geq 40, H_h \geq 100$  (note: constraint is on **hours**, not points)
- Admission to second and third year
  - No specific requirement: each board decides

### EECE Doctorate: all above SCUDO requirements, plus:

- Admission to final exam
  - $N \geq 1, R \geq 100, H_s \geq 40, D_h \geq 200$  + good marks at poster day (note: hard skill score based on **points** and not **hours**)
- Admission to 3<sup>o</sup> year:
  - $T = R + R_e + D_s + D_h \geq 220$  + good marks at poster day
- Admission to 2<sup>o</sup> year:
  - $T = R + R_e + D_s + D_h \geq 100$  + good marks at poster day

Admission to the final exam takes place at the end of the cycle (the date is indicated on the dashboard, on each student's personal page). In a dedicated meeting of the Academic Board, the Coordinator presents the list of indicators for all doctoral students at the end of their course, also illustrating the results of the evaluations collected during the Poster Day. Any critical cases are discussed, collecting the indications of the tutors. At the end of the discussion, the Board votes on the admissions. The admitted PhD students can then proceed to insert the external reviewers on the dashboard to start the procedure. It may happen that some PhD students do not meet the minimum criteria (particularly in terms of publications, sometimes still under review with uncertain timing) or need an extension for the completion of the thesis document. Such extension is generally granted within the limits permitted by current legislation as well as SCUDO regulations.

#### 4. Awards (\*)

The Students that are eligible for the yearly Awards are those that have already completed their 2<sup>nd</sup> and 3<sup>rd</sup> year (“junior” and “senior”, respectively). The Students’ evaluation for the assignment of the Awards is based on a two-step process, according to the following procedure:

1. Around the month of June, ScuDo initiates the Award assignment process. Students are notified and are requested to update their status on the “cruscotto”. It is strongly recommended that the “cruscotto” is kept up to date **at any time**, by logging all activities (training, research, publications, ...) right after they are effectively earned.
2. The EECE Coordinator communicates to the Students the day in which all indicators will be frozen and downloaded by the Awards Committee. Later updates will not count for the Award evaluation in process.
3. A first ranking of all Students (separate rankings for “junior” and “senior” Students) is generated, based on a cumulative indicator that accounts for Research activities (indicator  $R$ ), Training activities (measured in points exceeding the threshold  $D_s + D_h = 240$ ), Awards and other titles. The weights associated to each of these indicators is discussed and voted during a dedicated Academic Board meeting. Based on the above ranking, selected Students (twice the number of available awards for both “junior” and “senior”) are admitted to the second step of evaluation.
4. Shortlisted Students are requested to prepare and submit a 5-minute video presenting their research activity (guidelines and detailed instructions are provided at due time). Each video receives an evaluation from 5 different Reviewers.
5. A final ranking is prepared by assembling the results of both evaluation steps. The results are submitted to the Academic Board, which votes and approves the Awards assignment.

(\*) Starting from academic year 2020/21, PhD awards have been suppressed following a decision of the Polito administration. Nonetheless, the EECE Doctorate decided to preserve this initiative, as far as the required budget becomes available.

## 5. Training and External Activities

### Official training activities

The EECE Doctorate maintains its own list of official PhD courses, which are communicated yearly to ScuDo, who approves and publishes the list on the official web site. However, the EECE course list includes some additional details. For instance, several courses are activated every two years, in order to provide a rich catalogue without compromising the possibility of any Student to attend these courses (preferably during the first two PhD years). A two-year course planning is made available in a dedicated page of the ScuDo web site in the EECE Doctorate section. Please refer to that page for additional information, current link is

[http://dottorato.polito.it/eet/en/study\\_plan](http://dottorato.polito.it/eet/en/study_plan)

### Coursework

The Board of the PhD Course in Electrical, Electronics and Communications Engineering, in order to help students define their study plan, has decided to classify its training offer according to three criteria:

1. **Scientific area:** coarse application fields characterizing the research areas of the students, their tutors, and the research group in which they operate. Each PhD student belongs to a unique Scientific area, based on the following definitions:
  - DIS: all PhD students belonging to the curriculum “Dispositivi Elettronici” (“Electron Devices”) (including all students in DISAT and INFN);
  - ELN: all PhD students in DET, associated to the academic disciplines coded ING-INF/01 (Electronics), ING-INF/02 (Electromagnetic Fields), ING-INF/04 (Systems and Control Engineering), ING-IND/31 (Electrical Engineering), and NOT registered within the curriculum “Dispositivi Elettronici” (“Electron Devices”);
  - TLC: all PhD students in DET, associated to the academic discipline coded ING-INF/03 (Telecommunications);
  - ELT: all PhD students in DENERG and associated to the academic disciplines coded ING-IND/31-32-33 (Electrical Engineering; Power electronic converters, electrical machines and drives; Electrical power systems);
2. **Target:** what PhD candidates the course is primarily offered to. Students population is subdivided into four groups:
  - research group: the courses of this kind are more oriented to the presentation of specialized topics of interest to students whose research activities are concerning the particular;
  - IEEC: courses which, for the subjects treated, may be followed by all students who belong to the IEEC doctoral path;
  - IEEC+: they are intended as courses offered to IEEC doctoral path that can be of interest for some students of other SCUDO PhD programs;
  - SCUDO: this category includes courses that, thanks to their multidisciplinary nature, may be attended by all students of SCUDO.
3. **Approach:** how the subject is presented:
  - methodological to provide students with both theoretical and practical operational tools;

- informative aiming to provide students with the history, state of the art, and possible developments of the specific research topic.

Right after registration at the SCUDO offices, each student discusses and plans with his/her tutor the list of PhD courses (possibly including also M.Sc. courses and in exceptional cases also B.Sc. courses) that will be attended. Based on the classification above, each student will:

1. include in the coursework at least one course belonging to the his/her scientific area, passing the corresponding exam (mandatory);
2. complete the coursework by selecting the preferred courses from the list provided by the EECE Doctorate, or from any other Doctorate program of Politecnico di Torino.

## Schedule

Starting from academic year 2019-20, all course offered by the EECE Doctorate follow an official schedule that is maintained by the Administration staff. This schedule is available at the link

<https://tinyurl.com/2p8etrn6>

For any question related to the course schedule, send an inquiry to [ieec.orari@polito.it](mailto:ieec.orari@polito.it)

## External training activities

ScuDo allows attending external (non-Polito) courses and including them in the study plan. These courses must be approved by the Coordinator or his delegate. The EECE Doctorate has defined some guidelines for the eligibility of these courses, in particular:

- Official courses offered from Universities or Research Institutions (**YES**)
- Participation to conferences or workshops (**NO**)
- Tutorials and short courses at conferences (**YES**)
- Software training (**NO**, except if explicitly requested by Tutor, see below)
- Seminars at prestigious Universities/institutions (**YES**)
- Online courses (**NO**, except if explicitly requested by Tutor, see below)
- Seminars “PitchD” organized by IEEE Student Branch (**YES**)

External training activities are counted in hours. In order to approve an external training activity, appropriate documentation must be provided. Students are required to provide a certificate of attendance reporting their name and the exact number of course hours. No approval is possible without this documentation.

Approval procedure: **after** attending each course, the Students should upload all relevant information in the dedicated section of their “cruscotto” (course title, name, dates, number of hours) including the certificates of participation signed by the course organizer (in a single PDF file, to be uploaded directly in the “cruscotto” before closing submission). If compliant, approval will follow within few days.

For all those external training activities that by default are not eligible, **Tutors** are supposed to send an official request for approval (via an E-mail to the Board Delegate, currently the Vice-Coordinator, Prof. Gaudino, [roberto.gaudino@polito.it](mailto:roberto.gaudino@polito.it)).

## External research activities

Scientific travels and exchange periods are counted (in days) as “external research activities”. These research stays should be inserted (**before departure**) in the “cruscotto” and approved by the Coordinator or his Delegate. Full accounting of each stay is however granted only after a final report is uploaded to the “cruscotto”, soon after returning to Polito. The final report (a single PDF file) must include a confirmation of the dates of stay abroad. Usually, a signed letter from the host that certifies the period is sufficient. Any documentation that does not include the name of the Candidate or which does not report the exact starting and ending date is not sufficient and will be rejected. All Students are kindly requested to ask their host for such document while abroad, in order to avoid delays.

It is very important that the request for authorization is inserted properly and well in advance before departure. Upon authorization, the 50% scholarship increase (only for students with scholarship) will be automatic (pending final confirmation after returning and submitting final report).

The request for authorization for external research activities is **mandatory** and is a necessary condition to be able to proceed with the authorization of the budget and/or insurance (see point 6 below), especially for periods abroad. The dashboard procedure includes some mandatory declarations and assumption of responsibility currently required by the COVID legislation.

**Missions abroad will not be authorized without signing these declarations.**

## 6. Traveling

When PhD students travel (officially, i.e., paid by or through Politecnico di Torino), they **must** request authorization **before** departure using the dedicated web platform

<https://polito.u-web.cineca.it/>

When filling out the authorization form, an estimate of all travel expenses must be provided, and the responsible for the funds to be used must be selected. This person **cannot** be the PhD student, although the system allows for this choice: it is generally the tutor. Students requesting authorization for travel must discuss this in advance with their tutor, and should make sure that the tutor approves the trip right away, at least one week before departure.

### Approval process

Tutor first, then Coordinator

Tutor does not click & approve ⇒ Coordinator will not approve

Serious issues may arise when traveling without authorization  
including lack of coverage from health insurance

### When back

Submit travel report including receipts on the web portal (PDF)

Keep all original receipts (may have to deliver those too)

Limited research funds for traveling are available, for each PhD student (total 3770€). These funds are allocated for use during 2° and 3° year, but they can be anticipated to the 1° year if necessary (DET regulation).