Ph.D. Programme in Computer and Control Engineering (Dottorato in Ingegneria Informatica e dei Sistemi)

Operational procedures for the Ph.D title

Updated December 2024 (for Ph.D. candidates enrolled in the 37th cycle preparing to the Final Exam)

(based on the articles 29, 30, 31 of the Ordinance on Doctoral Studies at Politecnico di Torino issued with the R.D. n°899 of 21 October 2021, and on the decisions of the Academic Board of the Ph.D. in Computer and Control Engineering)

Ministerial Decree 45/2013, art. 8, c. 6

The title of Doctor of Philosophy, abbreviated with the words: "Dott.Ric." or "Ph.D.", is released as a result of the positive evaluation of a research thesis which contributes to the advancement of knowledge or methodologies in the chosen field of study.

The Ph.D. thesis, accompanied by an abstract in Italian or English, can be written in Italian or English or in any other language, if authorized by relevant Academic Board. The Ph.D. candidate shall attach a report to the thesis, providing a description of the activities carried out during the Ph.D. program. The thesis shall be evaluated by at least two internationally renowned professors, even from abroad, hereinafter referred to as the evaluators, who shall be external to any of the institutions involved in the Ph.D. title awarding. The evaluators shall analyze and assess the thesis and propose the admission of the candidate to the public discussion or postpone it for a maximum period of six months, if relevant integrations or corrections to the thesis, to which a new written assessment made by the same evaluators shall be attached, based on any correction and integration occurred. The public discussion shall take place in presence of an Examination Board whose composition shall be defined in pursuance of the provisions set out in the relevant regulations. At the end of the discussion, the thesis shall be approved or rejected, on the basis of a written report drafted by the Board.

If particularly relevant scientific results were achieved, the Examination Board is entitled to award by a unanimous vote a degree cum laude to the candidate.

1. Admission to the evaluation

Politecnico di Torino has developed a dedicated web tool for the evaluation procedure of the Ph.D. thesis available for the Ph.D. candidate, the Supervisor, the Coordinator, the evaluators (Referees) and the Examination Board.

Within the end of the third year of the Ph.D. Cycle, the Academic Board shall evaluate the training and research activities of each candidate and decide the admission to the procedure in order to achieve the Ph.D. Degree. The end of the third year for the candidates who had periods of suspension is postponed.

The Ph.D. candidate is admitted to the procedure of achievement of the Ph.D. Degree only if s/he obtains a positive evaluation of his/her research activities

and the minimum requirements for training activities and for publications, required by the Doctoral School Board, as mentioned in the Summary about the accounting system of 28 July 2017, *and by the Academic Board of the Ph.D. Programme in Computer and Control Engineering.*

In case of exceptional and motivated situations in which the candidate does not hold the requirements concerning the publications or the research activity but s/he can achieve them within a short time, the Academic Board can postpone the candidate evaluation to a future date.

The postponements can be multiple, but the Academic Board has to decide whether to admit the candidate or not, considering that the final version of the thesis and the documents mentioned below at 3.2 shall be uploaded on the web tool within 6 months after the end of the third year.

The admission to the Degree achievement procedure consists in: the Academic Board registers the admission, the Coordinator (or his delegate) enables the candidate to enroll in the Final Exam through the On Line Secretary, available from the personal page of the Teaching Portal. The candidate must apply for the Final Exam using the on line procedure, within ten days of admission from the Academic Board.

The Doctoral School reserves the right to carry out a verification on the obtainment of the requirements before of the exam date and, in the case they are not satisfactory, it can initiate the procedure for the decay of the candidate.

In the period between the conclusion of the cycle and the Final Exam, including the postponement period mentioned below at point 3.2, the candidate will still have the status of Ph.D. candidate, having access to the facilities in order to complete his research activity, but he will not receive the scholarship anymore.

The Academic Board can decide to exclude the candidate from the achievement of the Ph.D. Degree if: the candidate's research activities are insufficient for writing a Ph.D. thesis which would promote the research in the specific scientific field and if the minimum requirements cannot be achieved before the deadline.

2. Starting the evaluation procedure through web tool

In order to be admitted by the Admission Board, Ph.D. candidates shall upload in their application a report concerting the activities conducted during the triennium and the possible publications; the application supports this operation by generating a report of the conducted activities that can be modified.

After the admission to the procedure, candidates shall upload also their doctorate thesis and an abstract of the same written either in Italian or in English of a maximum of 2 pages.

Such upload shall be done by and no over 6 months from the end of the third year.

The candidate shall upload on the web tool a report providing a description of

the activities carried out during the whole Ph.D. and his/her publications list. After being admitted to the procedure, the candidate shall upload the thesis together with an abstract in Italian or English of maximum 2 pages. This loading has to be done within 6 months after the end of the three-years period. The summary of the activities carried out during the three-years of the Ph.D. will be automatically generated by the system.

The candidate's material uploaded in PDF/A version has to be validated by the supervisor who takes care of the anti-plagiarism check with the software indicated by the Doctoral School; the material will be available for the Referees only after the supervisor's validation. During the material evaluation, no revisions can be done.

The Ph.D. thesis has to comply with the thesis layout guidelines of the Doctoral School.

For each candidate, the access to the web tool shall be reserved for the Referees and for the Examination Board, only; the Supervisor and the Coordinator can access the web tool in order to supervise the whole process.

The Supervisor shall cooperate with the candidate to the success of the evaluation procedure and s/he has the responsibility to monitor the progress of the process.

3. Assessment of the thesis

3.1 Selection of the Referees

The Ph.D. thesis shall be evaluated by two University professors external to Politecnico, hereinafter referred to as Referees. They must be recognized at International level in the thesis research topic, possibly belonging to foreign institutions, external to the Academic Board and to partner bodies and/or associates and/or financing entities. The tenured researchers of public Italian and foreign Institutions, not connected with the Ph.D. Programme, could act as Referees if they are qualified experts in the thesis field. The Referees shall not share authorship of publications with the Ph.D. candidate in the last three years.

By the end of the third year, the Supervisor shall upload a list of perspective Referees (a minimum of 2 and a maximum of 5 Referees) and present it to the Academic Board that shall examine the admission to the evaluation. The Academic Board approves the Referees at the same time of the candidate admission.

Only candidates with a shortlist of 4 approved names can compete for the Quality Awards.

Nothing prevents that the same Referee is uploaded on multiple lists. No compensation is provided for Ph.D. thesis assessment.

The candidate, once enabled to the on line procedure, shall insert the approved Referees list in the specific section of the web tool. The candidate and the supervisor are responsible to comply with the conditions mentioned above regarding the Referees and the correct implementation of the list approved by the Academic Board on the web tool.

The web tool randomly selects the names of two Referees. In case of any replacement of the Referees, the web tool will indicate the sequence.

The Supervisor shall contact the two identified Referees and ask them to assess the thesis. It is suggested that the Supervisor contacts the Referees by an informal contact to facilitate Referees participation. For this purpose, the on line procedure will contact the Referees only after 5 days from the automatic generation of the list.

After 5 days of the Referees insertion, the official invitation to assess the thesis is automatically sent to the identified Referees. They will be explained the modalities to enter the web tool, and the reference materials for the Final Exam will be made available to them.

The Referees have to accept explicitly the task within one week, engaging to assess the thesis within one month after they have received it through the web tool. In addition, the Referees have to subscribe a Non-Disclosure Agreement that shall protect any confidential information relating to the thesis.

If one of the Referees does not accept the task or does not assess the thesis within the timeframe indicated (one month with one week of delay), s/he will be substituted by the next Referee of the list generated by the web tool.

3.2 The assessment procedure

The thesis, accompanied by the abstract and the report, uploaded by the Ph.D. candidate and validated by the Supervisor, becomes visible to the Referee when s/he accepts to participate to the evaluation process.

Within 30 days of the receipt of the materials, each Referee has to give an analytical opinion of the thesis through the web tool, proposing the admission to the public discussion, if necessary with minor revisions, or proposing a new assessment if relevant integrations or corrections were required.

In case of a new assessment, even if only one Referee asked it, the candidate has a maximum period of 6 months (starting from the assessment communication) for revisions and for uploading the new version of the thesis to be evaluated again. After the candidate has uploaded the new version of the thesis and has obtained the validation of his supervisor with the anti-plagiarism check, the on line procedure starts again in the same way. After the second assessment, in any case, the thesis is forwarded for the Final Exam, accompanied by a new written judgment of the Referees.

In case of minor revisions, the candidate has to revise the thesis and the other documents uploaded on the web tool and they have to be validated again by the Supervisor, including the anti-plagiarism check.

If one of the Referees does not deliver the assessment of the thesis within 30 days, despite repeated reminders, s/he will have one week to send his/her

feedback; if s/he had not answered, then s/he is declared revoked and s/he will be substituted by the next Referee of the list generated by the web tool. This replacement will be notified by email.

4. Ph.D. defense and title achievement

4.1 Examination Board for the final exams

The Rector shall appoint with an appropriate decree the Examination Board, proposed by the Coordinator and appointed by the Academic Board of the PhD Programme, which is responsible for the Ph.D. title achievement final evaluation.

Each Examination Board is made of five members with the right to vote, including the two Referees that have expressed their evaluation of the thesis. To be member of an Examination Board does not exclude the possibility to be part of other Examination Boards and/or to be Referees of other theses.

At least three members have to be external to Politecnico and belong to Italian or foreign Universities or public research Bodies, that are neither part of the Ph.D. Programme nor of the Academic Board which the Ph.D. candidate belongs to.

At least three members have to be indicated among professors and university tenured researchers, or among researchers belonging to Italian and foreign public research bodies. The Examination Board members external to the university field and to the above mentioned public research bodies must possess the Ph.D. title.

The Academic Board of the Ph.D. Programme in Computer and Control Engineering further decided that:

- At least one of the members of the Examination Board must own a foreign affiliation;
- At least one of the members of the Examination Board must belong to the Academic Board.

The President of the Examination Board has to be an internal member with the right to vote.

The Supervisor is an aggregate member, without the right to vote.

The members of the Examination Board cannot be in relationship of kinship or affinity up to the fourth degree included, among themselves or with the candidate.

The Doctoral School shall formally verify the requirements and, if respected, proceed with drafting the Rectoral Decree appointment.

In the event a member of the Examination Board with the right to vote resigns, the Rector, having heard the Coordinator, shall appoint a new member that holds the same requirements of the withdrawing member; the interested Ph.D.

candidate will be informed about the new Examination Board composition.

The Coordinator can propose to add to the Examination Board, without the right to vote, other eventual members, belonging to university structures or public and private research structures, as well as foreign ones. The expenses coverage related to those aggregate members do not belong to the University Administration.

In case of European or international collaboration projects or Ph..D joint programmes, the Examination Board is made according to the procedures provided in the agreements themselves, that in any case have to be coherent with the University partners Regulations.

The Examination Board identifies a President and a Secretary, among its members with voting rights.

The Examination Board members will be able to access the thesis, along with a summary, a report, and the Referees assessments through the on line application.

All the external Examination Board members are asked to fill a confidentiality/non-disclosure agreement to protect the reserved information that might be contained in the thesis.

The Examination Board appointment must be undertaken, at last, during the period granted for the revision. The work should be finalized within 90 days since the Referees final advice acquisition. Usually, after that deadline, the Examination Board, that has not finalized its work, expires and the Rector appoints a new Examination Board, excluding the expired members.

4.2 Final exams procedure

The Examination Board shall schedule the final exam calendar and communicate it, inserting the data on the online application, to the Ph.D. candidate and to the competent offices with reasonable advance. The Supervisor and the internal member are responsible for defining the dates and the inherent logistics. In scheduling the dates, the commission has to make sure the exam will be concluded within 90 days from the Referees assessments receipt.

For members with the right to vote belonging to the Examination Board and coming from outside Turin a mission expenses reimbursement is provided, according to the Politecnico di Torino Regulation. The reimbursement request shall be sent to the Doctoral School.

The Academic Board of the Ph.D. Programme in Computer and Control Engineering decided that all Examination Board members must be physically present for the defense. Participation through videoconference is envisaged only in very exceptional cases and must be previously approved by the Coordinator.

The defense of candidates from the Ph.D. Programme in Computer and Control Engineering usually takes place in the meeting room "L. Ciminiera".

The dress code should be business formal (at least for the candidate).

With the health emergency, the Academic Board of the Ph.D. Programme in Computer and Control Engineering admitted the final defense to be carried out remotely (e.g., via the Virtual Classroom system) or in a hybrid way (i.e., with some of the members connected from distance), upon verification of all the participants ID and provided that the remote members can follow the discussion and intervene in real-time, as well as examine all the documents used.

Following the communication of the Rector stating that, starting from January 2023, all the exams will have to be organized in presence, the Board of the Doctoral School decided to preserve the hybrid modality, but to request at least the President, the internal members and the candidate to be physically present, leaving the option to possibly connect from distance only to external members.

Regardless of the selected modality (face to face or distance), the following guidelines have to be followed.

The final exam to achieve the Ph.D. title consists of a public presentation usually of 40 minutes, followed by a discussion sustained by the candidate in front of the Examination Board, in which the candidate will debate his/her research. *The language used in all previous steps is English. The procedure is led by the President.*

At the end of the discussion, the Examination Board gathers, behind closed doors, for internal discussion. The thesis, with justified written collective evaluation approved by the majority of the 5 voting members, shall be approved or rejected. In the event of a negative evaluation, the status of Ph.D. candidate shall expire and the exam cannot be repeated.

The Examination Board, with unanimous vote, is entitled to award a degree "cum laude" in case of exceptional scientific results, or in case they represent, in the Examination Board experience, the best 10% of the examined thesis. *In order to help the Examination Board in the above process, the Academic Board of the Ph.D. Programme in Computer and Control Engineering established an internal Committee whose aim is to assign "Excellence labels", and decided that only candidates who have been assigned the label can be considered for the "cum laude". The President will be able to provide this information.*

The Examination Board must prepare an official report of the examination, which must be read, approved, and signed. Required confidentiality/non-disclosure agreements shall also be collected.

At the end of its work, the Examination Board gathers again in the same room of the discussion, and its President publicly informs the candidate of the final decision, using the expression: "<u>The Examination Board</u>, based on the thesis document you prepared and discussed today, taking also into account the results you achieved during the Ph.D. period, awards you the title of Ph.D. in Computer and Control Engineering of Politecnico di Torino."

The Ph.D. title is granted once the final exam is passed and is released by the

Rector, upon submission, by the Ph.D. candidate, of an electronic copy of the final thesis in the University open repository, according to the following art. 5.

National or international inter-university cooperation agreements may provide for specific procedures related to the Ph.D. title achievement, and a greater number of Examination Board members.

In case of unjustified absence to the final exam, the Ph.D. candidate shall lose the right to take the final examination. The absence is considered justified only in case of serious issues followed by appropriate documentation. In those cases, the candidate has to submit to the Rector, within 30 days after the defense scheduled date, a request to take the exam in another day, accompanied by appropriate documentation stating the absence reason and the impediment to take the exam. The Rector, considering the particular circumstances that have precluded the defense to the candidate, shall decide on the thesis discussion admission, with justified decree, as soon as the impediment no longer applies, in a date scheduled by the Board.

5. Legal deposit

Except for any other administrative requirement, the Ph.D. title achievement certification is subject to the submission of the final thesis, in electronic format, to the University open repository by the Ph.D. candidate, according to the rules and deadlines defined by the competent bodies.

Ph.D. theses are published with free access, protected under a CC BY-NC-ND Creative Commons license. The IRIS open archive allows to request a limited period of embargo on the archived thesis, if the author is required to comply with a secrecy bond.

The University shall proceed with the mandatory transmission to the National Libraries of Rome and Florence and to the ministerial database.

Upon request from the candidate and the tutor, conditionally to the approval of the Academic Board, part of the thesis, concerning the display of data covered by industrial confidentiality, can be made unavailable, in pursuance of provisions provided on this matter.

In case of Ph.D. thesis publication, the work must bear the following wordings: "Thesis discussed for the Ph.D. title achievement in ..., carried out in the Politecnico di Torino Ph.D. Programme in ...".

6. Final regulations

These operational procedures have been approved in the Doctoral School Board meetings of 29th April, 27th May, 21st July, 15th September 2016, 17th July 2017, 19th April 2018, and 19th July 2021.

For all matters not foreseen in these Regulations, one should refer to:

• Ministerial Decree No. 45 of 8th February 2013 "Regulation on matters of accreditation from competent institutions of locations and Ph.D.

programs and criteria for the establishment of Ph.D. courses"

- "Politecnico di Torino Doctoral Research Programs Regulation", issued by R.D 899 of 21st October 2013
- "Instructions about plagiarism and auto-plagiarism" available at https://www.polito.it/en/education/phd-programmes-and-postgraduate-school/phd-path/final-oral-defence

Appendice – Segreteria del Collegio di Dottorato in Ingegneria Informatica e dei Sistemi

Dettaglio azioni tutore e candidato:

- 1. Tutti i tutori dei candidati devono inviare entro la data ultima comunicata dal Coordinatore (15/01/25 per il 37° ciclo) all'indirizzo dauin.dottorato@polito.it la lista dei nomi componenti la rosa da cui verranno scelti i due revisori, con l'indicazione dell'Ente di appartenenza e dell'indirizzo di posta elettronica (avendone preventivamente raccolto la disponibilità e verificata la compatibilità con i requisiti indicati). Tale rosa verrà portata all'approvazione del Collegio dei Docenti in una successiva riunione, in cui verranno anche decise le ammissioni all'esame finale ed eventuali etichette di eccellenza. Ricevuta la comunicazione, da parte del Coordinatore, dell'avvenuta ammissione all'esame finale, il candidato caricherà i nomi dei componenti della rosa sul Cruscotto assieme al report delle attività svolte (informazioni valutate dal Collegio per l'ammissione all'esame finale). Il Coordinatore procederà alla validazione. A quel punto il Cruscotto permetterà al candidato di caricare la tesi, che dovrà essere approvata dal tutore. Il tutore dovrà verificare che il candidato abbia caricato sul Cruscotto, nella pagina "Dettaglio dottorando" la Declaration of Intent. Il candidato dovrà anche aver provveduto alla compilazione questionario di valutazione dell'esperienza di dottorato accessibile dalla pagina personale. Il candidato dovrà inoltre procedere all'iscrizione all'esame finale.
- 2. Nel caso in cui il titolo della tesi sia diverso dalla tematica di ricerca approvata dal Collegio dei Docenti all'inizio del primo anno, il candidato dovrà aggiornare il campo "Research topic" nella pagina web personale ed ottenere l'approvazione da parte del tutore contestualmente all'invio della rosa dei revisori o comunque prima dell'ammissione all'esame finale. Questo verrà portato in approvazione (o in ratifica) in una successiva riunione del Collegio.
- 3. In vista della discussione finale, il tutore dovrà caricare sul Cruscotto i nomi dei tre ulteriori componenti della Commissione Giudicatrice (avendone raccolto la disponibilità e verificata la compatibilità con i requisiti indicati); il tutore deve anche concordare con i membri della Commissione Giudicatrice la data, l'ora ed il luogo della discussione e quindi caricare tale informazione sul Cruscotto (dopo aver verificato la disponibilità della sala ed averla prenotata inviando una mail a prenotazioni.dauin@polito.it per la sala "Luigi Ciminera" o aver proceduto in maniera autonoma per le altre sale). Sempre attraverso il Cruscotto, il Coordinatore approverà la composizione finale della Commissione Giudicatrice (se conforme alle regole definite), che verrà poi ufficialmente nominata dal Rettore. Si suggerisce di considerare il tempo necessario per le approvazioni e la nomina nella definizione della data (il Cruscotto attualmente richiede che il Coordinatore approvi la Commissione almeno 10 giorni prima della data concordata per la discussione).
- 4. All'atto della comunicazione da parte di Scudo della nomina della Commissione Giudicatrice (e della data ufficiale di discussione della tesi), la

Segreteria del Dottorato provvede ad inviare un messaggio ai componenti del Dipartimento di Automatica e Informatica in cui si comunicano data e ora della discussione, insieme al nome del candidato, al titolo della tesi e ai nomi dei componenti la Commissione Giudicatrice. Tale informazione viene anche inserita sul sito del Dottorato in Ingegneria Informatica e dei Sistemi. La Segreteria del Dottorato provvede ad inviare al Presidente, che deve essere un membro interno, il verbale contenente l'informazione in merito al fatto che il candidato abbia ricevuto o meno l'etichetta di eccellenza.

- 5. Se la discussione si svolge a distanza, si raccomanda l'adozione della piattaforma messa a disposizione dell'Ateneo, per il cui uso si rimanda all'apposito Vademecum per la Gestione dell'esame di dottorato da remoto.
- 6. Terminato l'esame, il Presidente redige, con il supporto del Segretario, il verbale dell'esame utilizzando l'apposita funzionalità per la compilazione delle "Minutes of the Board of Examiners" presente sul Cruscotto. Solo dopo la conferma del verbale da parte del Presidente, gli altri membri della Commissione Giudicatrice hanno accesso ai documenti necessari per la sua convalida, attraverso la funzionalità di upload dei documenti. In particolare:
 - Tutti gli altri membri devono scaricare, compilare, firmare (eventualmente con firma digitale) e caricare la dichiarazione di concordanza, ovvero un documento nel quale dichiarano di aver partecipato alla stesura del verbale e di approvarne il contenuto.
 - In aggiunta, i membri esterni devono scaricare, compilare, firmare (eventualmente con firma digitale) e caricare il Non Disclosure Agreement, unitamente alla copia di un documento di identità.

Quando tutti i documenti sono stati caricati, il Presidente riceve un avviso da parte di Scudo e può procedere alla chiusura del verbale firmandolo digitalmente.

- 7. Entro la data della discussione il candidato deve inviare all'indirizzo <u>dauin.dottorato@polito.it</u> il file della presentazione, che verrà pubblicato sul sito del Corso di Dottorato in Ingegneria Informatica e dei Sistemi.
- 8. Sulla base delle indicazioni della Scuola di Dottorato, ad avvenuto superamento dell'esame finale, copia della tesi sarà caricata automaticamente nel repository di Ateneo nel formato Open Access, salvo che sia stato chiesto l'embargo precedentemente.