

Regulation for the evaluation of the doctoral students' activities (starting from Cycle XXXIV)

An evaluation mechanism is introduced on the doctoral students' activities, in such a way as to provide them (but also tutors) clear indications about the minimal targets to reach and on the criteria adopted in formulating the judgment for the admission to the final exam for completion of the PhD in "Information Engineering" at the Polytechnic University of Marche. Verification of the activities and their coherence with the criteria established by the present regulation is demanded to the Academic Board of the PhD course. Derogations to the evaluation mechanism here defined are possible, in principle, but shall be seen as "exception" and shall be supported and by the tutor. The latter, in submitting the request to the Academic Board shall: i) justify the reasons for which the doctoral student was not able to reach the prefixed targets; ii) evidence, in a clear, exhaustive and convincing manner the exceptional elements that prefigure the doctoral student's activity as above the average and such to justify her/his admission to the final exam also in absence of the achievement of the minimal targets.

Minimal targets

Generale criteria:

Minimal targets are related to training activities, publications and internationalization activities.

In details, 3 indicators are defined, as specified next, and for each of them a threshold value is set, which must be overcome at the end of the three years of the PhD course; if the thresholds will not be reached, the doctoral students will be excluded from the final exam.

Reaching the thresholds is necessary to be admitted to the final exam with a "sufficient" score. Depending on how much the threshold is overcome, and on other issues that will be specified afterward, the doctoral student will be admitted to the final exam with a score ranging between "sufficient" and "excellent"; the judgement will be formulated by the Academic Board of the PhD course.

Moreover, in order to be admitted to the second (third, respectively) year of the course, the doctoral students at the end of the first (second, respectively) year shall have reached an intermediate threshold value for the sum of the three indicators. If the intermediate threshold value will not be reached, conditioned on the positive advice of the Academic Board, on the basis of the documentation provided and Tutor's favorable opinion, only once (from first to second year or from second to third year) the doctoral student can be admitted conditionally to the subsequent year, during which she/he shall fill the debt of the previous year.

Indicators in detail:

1. Indicator of the training activity (D).

The *D* indicator is computed as follows:

$$D = \sum_{i=1}^{N_{corsi}} \frac{H_i}{\alpha_i} \cdot E_i$$

where:

- N_{corsi} is the number of courses (within or outside Università Politecnica delle Marche, including scientific seminars and Doctoral Schools);
- H_i is the number of (attended) hours of the i -th course;
- α_i is a factor which depends on the typology of the i -th course: $\alpha_i = 1$ for courses at PhD level (including scientific seminars and Doctoral Schools), $\alpha_i = 4$ for courses at Master level, $\alpha_i = 6$ for course at Bachelor level;
- E_i is a factor that holds: $E_i = 1$ when the course includes a final test and the student overcomes it; $E_i = 0.8$ in any other case (final test not present or not overcome).

In computing the value of D the two compulsory courses that the doctoral students must follow, drawn from the didactical offer of the PhD School of Engineering (<https://www.ingegneria.univpm.it/content/offerta-didattica-della-scuola-di-dottorato-aa-2021>) shall not be counted.

Check of the courses typology and their relevance to the Doctoral route is delegated to the Tutor. In any case, no course previously attended by the doctoral student, in the frame of her/his Bachelor or Master degree, is valid for the D indicator computation.

For any attended course it is recommended that the doctoral student acquires and shows a certificate of attendance, including, when applicable, the proof of passing the final test.

The threshold value for this indicator, at the end of the three years of the PhD course, is set equal to **30**.

2. Indicator of the research activity (R).

The R indicator is computed as follows:

$$R = 35 \sum_{i=1}^{N_{pubblicazioni}} \frac{P_i}{r_i}$$

where:

- $N_{pubblicazioni}$ is the number of publications;
- r_i is the number of doctoral students, in the three active cycles, who present, for their evaluation, the i -th publication;
- P_i is the value of the i -th publication, in agreement with the following table:

Tipo	P_i
Journal paper present in the ISI and/or Scopus database: 1° quartile	1
Journal paper present in the ISI and/or Scopus database: 2° quartile	0.9
Journal paper present in the ISI and/or Scopus database: 3° quartile	0.7
Journal paper present in the ISI and/or Scopus database: 4° quartile	0.6
Journal paper not present in the ISI and Scopus database with ISSN or ISBN	0.5
Proceeding of international conference present in the ISI and/or Scopus database	0.5
Proceeding of international conference with referees not present in the ISI and Scopus database	0.3

Chapter of international book with ISBN	0.6
National journal paper or proceeding of national conference with referees	0.1

In identifying the relevant quartiles for the ISI and Scopus journals, the doctoral students shall refer to the Impact Factor (ISI-JCR) or the SJR (Scimago Journal Rank) index. If the journal belongs to different Subject Categories and/or is present in both databases, the most favorable classification can be applied. The quartile to consider is the one of the publication year or, in absence of this data, the last available classification.

All research products not reported above do not produce any score.

The threshold value for this indicator, at the end of the three years of the PhD course, is set equal to **50**.

3. *Indicator of the internationalization activity (R_e).*

The R_e indicator is computed as follows:

$$R_e = d$$

being d the number of days spent in activities at universities and research centers with recognized prestige at international level, as well as in attending conferences/workshops/seminars with high international values, held abroad or even in Italy.

The threshold value for this indicator, at the end of the three years of the PhD course, is set equal to **20**.

Thresholds for admission to the second and third year:

- To be admitted to the second year of the PhD course, a first-year doctoral student shall acquire a total score:

$$S = D + R + R_e \geq 30 \quad \text{with } D \geq 20$$

- To be admitted to the third year of the PhD course, a second-year doctoral student shall acquire a total score:

$$S = D + R + R_e \geq 60 \quad \text{with } D \geq 30$$

Besides the above, during the three years, the doctoral student shall make, and certify, at least one international presentation (e.g., oral presentation of a paper at a conference). The period spent for the presentation will be considered in the computation of the R_e indicator.

Final judgement

In formulating the final judgement, various aspects will be taken into account, also peculiar of the scientific disciplinary sector (SSD) where the doctoral student's activity is comprised. Among them, we can mention:

- the value of the indicators with respect to the thresholds,
- the quality of the journals or the conferences where the doctoral student's papers have been published or presented,
- the type of work (experimental, simulation, modeling, etc.),
- the presence of co-authors belonging to other Italian and/or foreign universities or research centers,
- the number of graduate theses the doctoral student has supervised,
- awards and honors received,
- documented results in terms of technological transfer (e.g., patents),
- the type of training activity followed and, where applicable, the score received,
- the capacity to present the work done.

In addition to the list above, which is not exhaustive, the Academic Board will take in due account specific highlights coming from the doctoral student or her/his Tutor.

Finally, it is worth reminding that the general regulation of the PhD courses establishes that *“The activities listed below can be performed by doctoral students with no need for an increase of the scholarship, prior authorization by the Academic Board: a. tutoring activities for students of undergraduate and master's degree courses; b. integrated teaching activities, up to 40 hours for each academic year, free of charge.”* These activities, if declared by the doctoral student and certified by the Tutor, do not concur to the definition of the minimal targets for admission to the subsequent years and the final exam, but they will be taken into account in the formulation of the final judgment. On the opposite, the lack of this kind of activities will not have any negative impact on the evaluation.

In the same sense, limitedly to the Italian students and those coming from countries where English is not the prevalent tongue, it will be valued the acquisition of the B2 (or higher) certification in the knowledge of the English language.