Excerpt from "REGOLAMENTO INTERNO DEL CORSO DI DOTTORATO IN SCIENZE CHIMICHE E DEI MATERIALI (DSCM)"

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Nota bene: The present document is an informal translation of the official document originally produced and approved by the DSCM board in Italian; thus, it can only act as a support for internal communications. For any official issue or communication with the competent offices, please refer to the official regulation in Italian found at Regolamento interno del corso di dottorato in scienze chimiche e dei materiali (DSCM)

PART I

General provisions

Article 1 – The doctoral course

1. The doctoral program in Chemical and Materials Sciences (DSCM) aims to train PhD students in the most advanced research methods in the fields of Chemistry and Materials Sciences. PhD students will learn to address and solve complex problems through the competent use of experimental, computational, and theoretical techniques in a multidisciplinary research environment, covering aspects of synthesis, characterization, and development of molecular species, and organic, inorganic, polymeric and supramolecular materials. In this regard, doctoral students will have access to the facilities and equipment of the Department of Chemistry and Industrial Chemistry (DCCI), to the Chemistry library, and they can find extensive and varied scientific and technical support from the professors, members of the doctoral college, technical staff, and collaborators of the DCCI.

Each doctoral student must develop his/her own research project in one of the most modern and advanced fields of advanced chemistry, such as molecular modelling, synthesis and characterisation of molecular systems and aggregates, polymeric materials and functional and nanostructured hybrids, spectroscopic, thermodynamic and magnetic study of molecular and collective properties, the phenomena underlying the production, storage and transport of energy, innovative methods for the environmental, clinical and cultural heritage analysis, the chemical didactic, reaction mechanisms and molecular interaction processes, catalysis and sustainable chemical processes in terms of the correct use of environmental and natural resources. In addition, multidisciplinary research involving several scientific-disciplinary fields, including collaboration with other university departments and research bodies, both national and foreign.

- 2. DSCM promotes the development of the doctoral student's critical attitude and autonomy, from the design of the research work to its realisation, up to the valorisation and presentation of the results obtained. In the presence of results of potential application and patent interest, the protection of intellectual property will be guaranteed.
- 3. DSCM is committed to ensuring that doctoral students are actively involved in the dissemination, and exploitation of their research results. To this end, it takes care, also through dedicated courses and seminars,

the achievement of doctoral candidates' autonomy in the drafting of and academic articles and encourages their participation in national and international conferences.

- 4. The official language of the doctoral course is English. All the seminars, lectures, courses, midterms, and thesis defence are held in English.
- 5. DSCM administrative seat is based at the Department of Chemistry and Industrial Chemistry (DCCI).
- 6. The University of Pisa promotes equality and equal opportunities between men and women and, therefore, in this Regulation uses the male gender, which is always intended to refer to both sexes, only for the sake of simplicity and synthesis.

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PART II

Admission

Article 3 – Admission

According to the current legislation, admission to the doctorate is conditional to the public comparative evaluation of the applicants or by means of the procedure for supernumerary candidate admission.

Article 4 – Admission tests

1. The admission exam is held in two different ways with respect to candidates with a degree obtained in Italy and those who concur to the special selection reserved to applicants holding a foreign academic qualification equivalent to master's degree.

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3. For the selection reserved for graduates from foreign universities, the exam consists of an evaluation of the curriculum (50 out of 100 points), an oral interview (50 out of 100 points), covering basic knowledge of chemistry and materials science, and a discussion of the research project submitted when applying. Only candidates who have achieved at least 30 points out of 50 in the curriculum evaluation are admitted to the oral examination. The interview will be carried out in English, and it can be held in videoconference, upon motivated request of the candidate and after approval of the college. The interview is considered passed if the candidate obtains a total score of at least 20 out of 50 points.

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PART III

Attendance at the doctoral course

Article 6 – Supervisor and co-supervisors

1. Within the first two months of the start of the course, the Academic Doctorate Board ('Collegio dei docenti", henceforth referred to as Board) will appoint a supervisor and a co-supervisor for each doctoral student, who will normally be chosen either from among the members of the Board or from among the

professors and researchers of the DCCI, in accordance with art. 13 of the University Regulation on Doctoral Programs. Co-supervisors can belong to scientifically qualified staff from other universities or public and private research institutions.

- 2. The PhD student agrees with the supervisor and co-supervisor on a research project, which is then submitted to the Board.
- 3. The supervisor and the co-supervisor, supported by the Board, assists the PhD student during his scientific and didactic activity and guides him in the selection and implementation of the scientific objectives related to the planned research project.

Article 7 – Activities and verification

- 1. Doctoral students must comply with the rules established for each doctorate cycle by the Board. They must develop the research activity program agreed with the supervisor and the co-supervisor, also attending courses and/or seminar cycles approved by the Board.
- 2. During the first year, doctoral students must have attended two or more courses of a total of at least 32 hours, among those organized by the doctoral course. With the prior approval of the College, one or more of these courses may be replaced by courses organized by the University of Pisa (...), by other doctoral schools or by national or international schools for an equivalent number of hours. The courses referred to in the first point may, at the discretion of the supervisor, be completed with a positive attestation from the supervisor himself; in all other cases, a certificate of attendance self-certified by the doctoral candidate will suffice. For each PhD student, the plan of the above-mentioned activities must be agreed with the supervisor and co-supervisor and with the Course Coordinator.
- 3. First year students must hold a lecture of at least one academic hour as supplementary teaching activity within a master's degree course in Chemistry, Industrial Chemistry or similar university courses and schools of excellence, after agreement with the teacher of the course, the supervisor and co-supervisor, and the coordinator. The lecture must be communicated to the coordinator by the teacher of the course.
- 4. Second- and third-year PhD students must have attended two or more courses, for a total over the two years of at least 28 hours, among those organized by the doctoral course; attendance must be self-certified by the doctoral student. Subject to authorization by the College, one or more of these courses may be replaced by courses organized by the University (...), by other doctoral schools, or by national or international schools, for an equivalent number of hours.
- 5. PhD students in all years of the course may attend the activities referred to in Art. 4, paragraph 2, lett. f) of Ministerial Decree no. 226/2021, organized by the University of Pisa. Any compulsory attendance is established by the University or by the Board of teachers for each year of the course.
- 6. PhD students must hold yearly seminars on their research activities, upon agreement with the Board. These seminars will be evaluated, according to the procedures established for each doctorate cycle by the Board.
- 7. At the end of each year, PhD students must submit a short progress report on the training activities carried out (e.g., attendance at courses, schools, seminars) and one on their own research activity.

- 8. At the end of each year, the supervisor and the co-supervisor must, by mutual agreement, provide the board with a short judgment of the research activity of the PhD student. If the evaluation is positive, it may be brief, while any critical aspects must be detailed.
- 9. At the end of each academic year, the Board assesses for each doctoral student the completion of the planned training activities and the results of the research carried out and gives an opinion on their suitability. This verification considers the following:
 - a. for first-year doctoral students, the outcome of the courses for which a final examination as referred to in paragraph 2;
 - b. carrying out the activities referred to in points 2, 3 and 4;
 - c. the seminars held (point 5);
 - d. the reports referred to in point 6;
 - e. the supervisor's and co-supervisor's assessment of the research activity carried out (point 7);
 - f. publications in international journals, poster and oral presentations at national or international conferences

Article 8 - Compatibility and incompatibility

- 1. Doctoral students must carry out their research activities in the DCCI laboratories or at highly qualified institutions approved by the Board. Within the framework of special agreements proposed by the Board and approved by the Department Council, part of the research activity may be carried out in Italian and foreign companies that conduct research and development activities. The access to and the presence in DCCI laboratories and facilities is guaranteed to all PhD students and must be carried out in compliance with all the provisions laid down in DCCI regulations, in particular those for the protection of workers' health and safety in the workplace.
- 2. PhD students may perform their activities abroad for a limited period, for a maximum indicated in the current legislation, upon approval by the Board, following a request accompanied by a brief project of the activities to be carried out.
- 3. Doctoral students may carry out, as an integral part of their training project and subject to the authorization of the Board, tutoring, supplementary and/or subsidiary teaching activities, including preparatory and remedial teaching activities, in the manner and within the limits provided for by law and by the University regulations.
- 4. The attendance of the doctorate course entails an exclusive and full-time commitment, as regulated by the current legislation.

Article 9 – Extensions

The Board may grant, during the final year of the course, an extension of a maximum duration of twelve
months, without further financial burdens, upon request of the doctoral student, for a single time and for
proven reasons that do not allow the presentation of the doctoral thesis within the timeframe provided for
by the University regulations.

- 2. The Board may grant doctoral students with scholarships, when verifying the passage of the doctoral student to the third year, and at least six months before the end of the third year of the doctoral course an extension of a maximum duration of twelve months, based on scientific needs. The extension is granted upon verification by the College of the financial coverage of the extension of the scholarship for the entire extension period.
- 3. The periods of extension, referred to in paragraphs 1 and 2 above, and of suspension referred to in Article 16 of the University Regulation on PhDs, may not exceed a total duration of eighteen months, without prejudice to maternity/paternity leave and other specific cases provided for by law.

Part IV

Title attainment

Article 10 – Finale examination

- 1. Regulations for the award of the PhD degree are established by the current legislation.
- 2. At the end of the 3rd year, the Board sets the deadlines for the following steps:
 - a. the supervisor and co-supervisor suggest a shortlist of possible evaluators, belonging to prestigious universities or public or private research institutions, preferably foreign, and in any case not belonging to the University of Pisa nor to the doctoral college; the evaluators must not have had direct collaboration relations with the doctoral student:
 - b. the Board assigns two evaluators to each PhD thesis following verification of their availability;
 - c. the thesis, submitted by the candidate within the prescribed deadlines, is evaluated by the Board, as established by the University regulations;
 - d. once a positive opinion of the Board has been obtained, the thesis is forwarded to the evaluators, who are asked to express an analytical opinion within 1 month of receipt (...);
 - e. the final assessment of the evaluators can be: direct admission to the final exam; minor changes under the responsibility of the candidate (for which no further revision is required); major changes requiring a second revision step, provided that within subsequent six months after the issuance of the analytical opinion referred to in point d; reject;
 - f. if major changes or integrations have been requested, the Board sends the thesis back to the evaluators, together with a letter of reply in which the doctoral student explains any change and/or integration;
- 3. Until the thesis is discussed, the doctoral student is authorised to attend the University's facilities for the performance of all activities aimed at completing the thesis, and enjoys the rights and faculties provided for in art. 19, paragraph 9 of the University Regulation on PhDs.
- 4. The date, time and place of the final discussion is proposed by the coordinator, after consulting the availability of both the commission and the candidate.
- 5. The candidate must send a draft of the thesis to the members of the commission at least 20 days before the public defence. The final version of the thesis in any case must be submitted by the PhD student in digital format, at least 3 days before the public defence, according to university regulation.

- 6. Thesis, oral examination, results achieved throughout the doctoral course, publications, oral communications in international conferences and activities carried out during the periods spent abroad, all contribute to the formulation of the final judgment.
- 7. After the graduation, in addition to the diploma, a document is issued to the research doctor, signed by the course coordinator, certifying the activities carried out during the doctorate.

Article 11 – Examining commission

- 1. The commission is appointed as indicated in the University regulations.
- 2. It is composed of 3 members, 1 of which are chosen among DCCI professors and researchers, 2 members external to University of Pisa, experts in the thesis topic.
- 3. Under no circumstances may the supervisor and co-supervisor participate in the commission.

Part V

Agreements and internationalisation

Article 12 - Agreements and internationalisation

1. In order to effectively achieve the coordination of high-level national and international research activity and international level, the University of Pisa may enter into agreements and establish consortia, also aimed at awarding a multiple or joint degree, in accordance with the regulations in force.

Article 13 – Doctorate in co-tutelle

1. PhD students at the University of Pisa and of foreign universities may attend the doctorate in co-tutelle for the realization of the thesis, according to the provisions of current legislation and the conditions agreed in the convention.

Article 14 – Doctor Europaeus

1. On request of the doctoral student, the University may issue the Doctor Europaeus / International Doctorate certification if the conditions foreseen by current regulations exist.

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