



Governo do Estado do Rio de Janeiro

Universidade do Estado do Rio de Janeiro

Conselho Superior de Ensino, Pesquisa e Extensão

Secretaria dos Conselhos

Resolution No. 12/2023

AUTHORIZES THE RESTRUCTURING OF THE MASTER'S AND DOCTORAL ACADEMIC PROGRAMS IN THE GRADUATE PROGRAM IN COMPUTATIONAL SCIENCES AND CHANGES ITS NAME TO THE GRADUATE PROGRAM IN COMPUTATIONAL SCIENCES AND MATHEMATICAL MODELING.

The **Higher Council for Teaching, Research, and Extension**, exercising its authority granted by the sole paragraph of Article 11 of the UERJ Statute, based on Process SEI260007/024388/2023, approved and I hereby enact the following Deliberation:

Art. 1^o - Authorization is hereby granted for the restructuring of the Master's and Doctoral Academic Programs in the Graduate Program in Computational Sciences, whereby the program's name is changed to the Graduate Program in Computational Sciences and Mathematical Modeling (PPG-CompMat).

Single Paragraph -- The Master's and Doctoral Programs in Computational Sciences and Mathematical Modeling will be offered by the Institute of Mathematics and Statistics (IME), an academic unit affiliated with the UERJ Center for Technology and Sciences.

Art. 2^o - The Graduate Program in Computational Sciences and Mathematical Modeling will comply with the provisions of its Specific Regulation, Annex I of this Deliberation, and the General Regulations for Graduate Programs at UERJ (Deliberations No. 42/2015 and 22/2019), as well as with the federal legislation governing *stricto sensu* Graduate Programs in the country.

Art. 3^o - The criteria for faculty accreditation, de-accreditation, and re-accreditation will follow the provisions specified in Annex II of this Deliberation.

Art. 4^o - The criteria for evaluation and accreditation of advisors will follow the provisions specified in Annex III.

Art. 5^o - The curriculum structure for the Master's Academic Program in Computational Sciences and Mathematical Modeling will follow the provisions specified in Annex IV of this Deliberation.

Art. 6^o - The curriculum structure for the Doctoral Academic Program in Computational Sciences and Mathematical Modeling will follow the provisions specified in Annex V of this Deliberation.

Art. 7^o - This Deliberation enters into force on this date, repealing Deliberation No. 10/2019 for new admissions to the Program from this date onwards, and revoking any provisions to the contrary.

UERJ, June 29, 2023.

Annex I

Specific Regulation of the Graduate Program in Computational Sciences and Mathematical Modeling – Academic Master’s and Doctoral Programs

Title I – Objectives

Art. 1º - The stricto sensu Graduate Program in Computational Sciences and Mathematical Modeling (PPG-CompMat) aims to train qualified professionals at the Academic Master’s and Doctoral levels to work in higher education, research, and technological development, as well as to promote technological innovation and professional advancement in the interdisciplinary field of Computational Sciences and Mathematical Modeling.

Single Paragraph -- The Master’s and Doctoral Programs in Computational Sciences and Mathematical Modeling are intended for graduates of undergraduate programs in areas such as Exact and Earth Sciences, Engineering, Applied Social Sciences, and Biological and Health Sciences, provided that their background aligns with the PPG-CompMat research lines. In addition, the Doctoral program is intended for holders of Master’s degrees in the aforementioned fields of knowledge.

Art. 2º - The objectives of the UERJ PPG-CompMat are:

- (a) To promote theoretical and applied research in topics relevant to Computational Sciences and Mathematical Modeling;
- (b) To foster the theoretical, practical, and methodological development of its researchers, faculty, and students;
- (c) To prepare highly qualified professionals with an interdisciplinary profile;
- (d) To complement the professional training of program students, expanding and deepening the knowledge acquired in their academic education;
- (e) To encourage national and international exchange in Computational Sciences and Mathematical Modeling.

Title II – Administrative Organization

Art. 3º - The Master’s and Doctoral programs of PPG-CompMat will be administered by the Institute of Mathematics and Statistics (IME/UERJ), an academic unit affiliated with the UERJ Center for Technology and Sciences.

Art. 4º - The PPG-CompMat will be overseen by a committee, the Graduate Coordination Committee in Computational Sciences and Mathematical Modeling (PPGC-CompMat), composed of:

- (a) the General Coordinator of the PPG-CompMat;
- (b) the Deputy Coordinator of the PPG-CompMat;
- (c) one faculty representative from each department active in the PPG-CompMat;
- (d) one student representative from the PPG-CompMat;
- (e) one technical-administrative representative from the PPG-CompMat.

§1º - The General and Deputy Coordinators will be elected by direct and secret ballot by the permanent and collaborating faculty of the PPG-CompMat, with a two-year term and a maximum of one consecutive reappointment.

§2º - The General and Deputy Coordinators must be permanent faculty of PPG-CompMat, active members of the UERJ faculty, and assigned to the IME.

§3º - In the absence of the General Coordinator, the Deputy Coordinator will assume their duties.

§4º - The names of the General Coordinator and Deputy Coordinator will be submitted to the IME/UERJ Directorate for appointment by Ordinance, following ratification by the Departmental Council.

§5º - If the term of the General or Deputy Coordinator is interrupted, a new election will be held solely for the completion of the term.

§6º - Faculty representatives will be elected by direct vote among their peers from the same IME department, with a two-year term and no limit on reappointments.

§7º - Faculty representatives must be permanent or collaborating faculty in PPG-CompMat, active members of the UERJ faculty, and assigned to the IME.

§8º - If the term of faculty representatives is interrupted, a new election will be held solely for the completion of the term.

§9º - The student representative will have one alternate and will be elected by direct and secret ballot by the PPG-CompMat student body, with a one-year term and a single reappointment allowed only if the representative is a doctoral student.

§10º - The student representatives (primary and alternate) must be regularly enrolled in PPG-CompMat.

§11º - The technical-administrative representative will be elected by direct vote among their peers from the PPG-CompMat administrative staff, with a two-year term and no limit on reappointments.

§12º - The composition of the PPGC-CompMat must be ratified by the Departmental Council of the Institute of Mathematics and Statistics.

Art. 5º - The PPGC-CompMat will convene at the request of the General Coordinator or a majority of its members.

§1º - PPGC-CompMat decisions will be made by a majority vote of those present.

§2º - In case of a tie, the General Coordinator will have the deciding vote.

§3º - Permanent, collaborating, and visiting faculty of PPG-CompMat may participate in PPGC-CompMat meetings, with speaking rights but without voting rights.

§4º - Decisions made by the PPGC-CompMat may be appealed to the Departmental Council of IME/UERJ as a second instance, with the possibility of further appeal to higher levels within UERJ's organizational structure.

Art. 6º - It is the responsibility of the PPGC-CompMat to:

(a) Propose revisions to the specific regulations of the PPG-CompMat;

(b) Draft and approve Normative Decisions;

(c) Organize the PPG-CompMat courses and oversee their development;

(d) Review and, if appropriate, approve research lines to be developed within the PPG-CompMat;

(e) Propose PPG-CompMat courses, establishing their syllabi and credit units;

(f) Prepare and publish the Selection Notices, after approval by the Office of the Vice Rector for Graduate Studies and Research;

- (g) Appoint Selection Committees for PPG-CompMat candidate admissions;
- (h) Ratify the members of the Scholarship Committee, as well as approve the allocation of institutional scholarships granted to the Program, when applicable;
- (i) Ratify the results of selection processes and communicate them to the appropriate authorities;
- (j) Develop the academic program;
- (k) Decide on matters concerning enrollment, re-enrollment, course waivers, transfer and credit recognition, partial or full enrollment suspension, as well as handle representations and appeals submitted to it;
- (l) Approve the main and alternate members of the Examination Committees for Master's or Doctoral Project Qualification and Dissertation or Thesis Defense;
- (m) Authorize the replacement of Advisors;
- (n) Appoint a substitute for the Advisor, in cases where the Advisor is unavailable, to preside over the Examination Committee for Master's or Doctoral Project Qualification and Dissertation or Thesis Defense;
- (o) Ratify the results of Dissertation and Thesis defenses, communicating them to the appropriate authorities;
- (p) Promote connections and partnerships with national and international organizations interested in supporting the development of the PPG-CompMat;
- (q) Coordinate the implementation of courses and activities to ensure the fulfillment of program content;
- (r) Decide on extensions for the completion of courses, activities, or exams;
- (s) Set deadlines for the completion of work by students who receive an "I" (Incomplete) grade in PPG-CompMat courses, in consultation with the course instructor, provided it does not exceed the following academic semester;
- (t) Manage the financial resources allocated to the PPG-CompMat for its operation, respecting University financial regulations;
- (u) Ratify the evaluations regarding the accreditation, de-accreditation, and re-accreditation of the PPG-CompMat faculty;
- (v) Make decisions on matters not covered by these regulations, within the scope of its legal responsibilities.

Art. 7º - The responsibilities of the General Coordinator are as follows:

- (a) Convene and preside over PPGC-CompMat meetings;
- (b) Develop proposals for the overall plan of the PPG-CompMat, as well as the academic program, and supervise its execution;
- (c) Present and submit suggestions aimed at the development and improvement of the PPG-CompMat;
- (d) Represent the PPG-CompMat, when invited, in UERJ councils and with other programs, bodies, and institutions;
- (e) Promote exchanges with other national and international graduate programs;
- (f) Supervise the services of the PPG-CompMat Secretariat and issue certificates or attestations related to teaching and student activities;

- (g) Represent the PPG-CompMat before government bodies and official funding agencies;
- (h) Monitor the evaluation processes of the PPG-CompMat in conjunction with CAPES;
- (i) Make decisions *ad referendum* of the PPGC-CompMat in cases of urgency and when a Commission meeting cannot be held.

TITLE III - ACADEMIC ORGANIZATION CHAPTER I - FACULTY

Art. 8º - The faculty of the PPG-CompMat will be composed of Permanent Professors, Collaborators, and Visitors, with a Doctorate degree required in a field compatible with the research lines of PPG-CompMat.

§1º - Permanent faculty members are those who systematically engage in teaching activities, participate in research lines, supervise students of PPG-CompMat, and maintain a minimum scientific production defined by the PPGC-CompMat, based on the criteria outlined in Annex II of this Resolution.

§2º - Members of the Permanent, Collaborator, and Visitor faculty of PPG-CompMat will be required to engage in creative activity, demonstrated by scientific production in their area of expertise and academic background.

§3º - The inclusion of a new member in the Permanent, Collaborator, and Visitor faculty of PPG-CompMat must be approved by the PPGC-CompMat and forwarded to the higher authorities of UERJ, based on the candidate's activity plan and proven scientific productivity, which must be compatible with the productivity of the faculty of PPG-CompMat, in accordance with what is established in Annex II of this Deliberation.

Art. 9º - The faculty will be evaluated internally by a Faculty Evaluation Committee every two (2) years, based on the criteria for accreditation, de-accreditation, and re-accreditation defined in Annex II (Master's and Doctorate) and the evaluation and accreditation criteria for advisors based on Annex III. The criteria established by CAPES for the evaluation of master's and doctoral courses related to the Interdisciplinary area will also be respected.

Single Paragraph – The Faculty Evaluation Committee will be composed of three (3) professors from the permanent faculty of PPG-CompMat, with at least one member from the PPGC-CompMat.

Art. 10º - The responsibilities of the Faculty Evaluation Committee include:

- (a) developing criteria for the accreditation, de-accreditation, and re-accreditation of faculty and master's and doctoral advisors, based on current guidelines from CAPES, funding agencies, and the scientific community;
- (b) accrediting, de-accrediting, and re-accrediting faculty according to the criteria defined in the document in Annex II of this Deliberation, as necessary, to ensure a high scientific-academic standard for the Program;
- (c) evaluating the academic performance of the faculty.

Art. 11º - The evaluation and accreditation criteria for advisors of PPG-CompMat will follow what is established in Annex III of this Deliberation.

Art. 12º - An external faculty member, who does not fall into the categories established in Article 8, may be invited, on an occasional basis and at the discretion of the PPGC-CompMat, to teach courses in PPG-CompMat and co-supervise master's dissertations and doctoral theses with a permanent faculty member, when these activities represent a benefit to PPG-CompMat, according to the criteria established in the document contained in Annex III of this Deliberation.

CHAPTER II - ENROLLMENT, SELECTION, AND REGISTRATION

Art. 13º - The PPG-CompMat is intended for holders of a Bachelor's Degree, including Technologists, granted by an official Higher Education Institution (IES) or recognized by the National Education Council (CNE) in areas of Exact and Earth Sciences, Engineering, Applied Social Sciences, and Biological and Health Sciences, related to the research lines of PPG-CompMat.

§1º - In the case of foreign students, diplomas issued by institutions recognized in their countries of origin will be accepted.

§2º - Documents in foreign languages must be accompanied by a sworn translation or equivalent, except for documents in commonly used languages in the research environment.

Art. 14º - The application requests and the documentation required for the selection process for the Master's or Doctoral Course must be sent to the PPG-CompMat Secretariat, according to the calendar published in specific announcements, after approval by the Pro-Rector of Postgraduate Studies and Research.

Single paragraph – Exceptionally, applications for the Doctorate may be accepted from students who have completed only their Bachelor's Degree, subject to the Selection Committee's deliberation.

Art. 15º - The selection of candidates will be carried out by the Selection Committee composed of at least three faculty members of the PPG-CompMat, one of whom will be a member of the PPGC-CompMat and will serve as the committee chair.

Single paragraph – The number of available spots for the Master's and Doctoral programs will be announced in the respective announcements, approved by the Pro-Rector of Postgraduate Studies and Research.

Art. 16º - The selection of candidates for the Master's and Doctoral programs will consist of the following stages:

(a) Examination of the documentation presented by the candidate;

(b) Evaluation of candidates presenting complete documentation, based on a curricular analysis, according to quantitative criteria defined by the Selection Committee published in the announcements, which will consider the undergraduate performance coefficient (CR), academic production, professional experience of the candidate, evaluation letters, and the letter of intent;

(c) Verification of the ability to read and comprehend texts in English, with candidates considered eligible according to the terms set out in the selection announcement;

i. Foreign candidates whose native language is not Portuguese must also take a Portuguese language exam, according to the criteria of the Selection Committee;

(d) Defense of an academic memorial;

(e) The selection of approved candidates will be made based on a ranking list according to the scores obtained, following criteria defined in the announcement.

(f) The granting of master's and doctoral scholarships awarded by funding agencies to PPG-CompMat will adhere to the classification made by a program-specific committee established for this purpose, following the guidelines of CAPES and UERJ.

Single paragraph – It is the responsibility of the Scholarship Committee to evaluate the performance of scholarship holders according to the norms established in PPG-CompMat and allocate the institutional scholarships granted to the program, when applicable.

(g) In the case of a partnership or similar instrument signed with other national or foreign institutions, the admission of candidates will comply with its terms and will be analyzed by the PPGC-CompMat or a specific Evaluation Committee, following the guidelines of the PPGC-CompMat.

(h) Selected candidates will be called for enrollment by the PPGC-CompMat, which will determine in the announcement the deadline for enrollment and the necessary documents for its completion, fulfilling the requirements of university regulations.

Art. 17º - The granting of master's and doctoral scholarships awarded by funding agencies to PPG-CompMat will follow the classification made by a specific program committee established for this purpose, in accordance with the guidelines of CAPES and UERJ.

Single paragraph – It is the responsibility of the Scholarship Committee to evaluate the performance of scholarship holders according to the norms established in PPG-CompMat and to allocate the institutional scholarships granted to the Program, when applicable.

Art. 18º - In the case of a partnership or similar instrument signed with other national or foreign institutions, the admission of candidates will comply with its terms and will be analyzed by the PPGC-CompMat or a specific Evaluation Committee, following the guidelines of the PPGC-CompMat.

Art. 19º - Selected candidates will be called for enrollment by the PPGC-CompMat, which will determine in the announcement the deadline for enrollment and the necessary documents for its completion, fulfilling the requirements of university regulations.

TITLE IV – ACADEMIC REGIME CHAPTER I – STRUCTURE AND DURATION OF COURSES

Art. 20º - The Master's Course, which includes the defense of the Dissertation, must be completed in a minimum period of 12 (twelve) months and a maximum of 24 (twenty-four) months; and the Doctoral Course, which includes the defense of the Thesis, must be completed in a minimum period of 24 (twenty-four) months and a maximum of 48 (forty-eight) months.

§1º - For the completion of the Master's or Doctoral Course at PPG-CompMat, the period will be counted from the start date of the course until the defense date of the Dissertation in the case of the Master's, or the defense of the Thesis in the case of the Doctorate.

§2º - In the case of a duly justified and documented request, the PPGC-CompMat may authorize a maximum extension of up to 6 (six) months for the duration expected for the completion of the Master's Course and up to 12 (twelve) months for the duration expected for the completion of the Doctoral Course.

§3º - Only in exceptional cases, duly justified and documented, may new requests for extensions be granted.

§4º - The academic regime of the Master's and Doctoral courses will be semester-based.

Art. 21º - The student may, with the proper authorization of the PPGC-CompMat, carry out academic activities outside the PPG-CompMat headquarters, either in the country or abroad, provided that the existence of qualified individual supervisors, a creative environment, adequate material conditions, and a solid collaboration with PPG-CompMat are guaranteed.

§1º - The total credits earned by the student outside the PPG-CompMat headquarters may not exceed

50

Art. 22º - Upon a duly justified and documented proposal, the PPGC-CompMat may grant a leave of absence for a maximum period of 6 (six) months, with no right to renewal, in the case of the Master's program. For the Doctorate, the PPGC-CompMat may grant up to two leaves of absence, each with a maximum period of 6 (six) months.

§1º - The period of leave of absence may only be granted from the second academic semester and will be considered for the purpose of course completion.

§2º - In case of return after a leave of absence, the student must follow the same regulations in effect at the time of re-enrollment. Exceptions must be approved by the PPGC-CompMat with the consent of the advisor and the student.

§3º - A student who exceeds the legally permitted leave period will be dismissed from the PPG-CompMat.

Art. 23º - Medical leaves and maternity leave will be granted in accordance with the law.

CHAPTER II – CREDIT REGIME

Art. 24^o - The completion of the studies required by the PPG-CompMat will be expressed in credit units, in accordance with the current regulations at UERJ.

Art. 25^o - To complete the credits for the Master's Course, the PPG-CompMat student must complete at least 30 (thirty) credit units, equivalent to 450 (four hundred and fifty) hours, distributed as follows:

- (a) 8 (eight) credits in mandatory courses (Group I, Appendix IV);
- (b) 16 (sixteen) credits in elective courses within the Program, chosen with the approval of the Advisor, among Groups II, III, or IV (as defined in Appendix IV);
- (c) 1 (one) credit for Teaching Internship I;
- (d) 2 (two) credits for the Qualification of the Master's Thesis Project;
- (e) 3 (three) credit units for the Master's Thesis.

Art. 26^o - To complete the credits for the Doctoral Program, the PPG-CompMat student must complete at least 55 (fifty-five) credit units, equivalent to 825 (eight hundred and twenty-five) hours, distributed as follows:

- (a) 12 (twelve) credits in mandatory courses (Group I, Appendix V);
- (b) 8 (eight) credits in elective courses chosen within Group II, as defined in Appendix V;
- (c) 28 (twenty-eight) credits in elective courses within the Program, chosen with the approval of the Advisor, among Groups II, III, or IV in Appendix V;
- (d) 1 (one) credit for Teaching Internship I;
- (e) 1 (one) credit for Teaching Internship II;
- (f) 2 (two) credits for the Qualification of the Doctoral Thesis Project;
- (g) 3 (three) credits for the Doctoral Thesis.

Art. 27^o - The acceptance of credits previously earned in a strictu sensu Graduate Program, recommended by CAPES, or in equivalent courses from foreign institutions, will depend on a request by the student and acceptance by PPGC-CompMat.

§1^o - A maximum of 50% (fifty percent) of the credits required by the PPG-CompMat in courses will be accepted, as per Article 25 for the Master's program or Article 26 for the Doctoral program.

§2^o - Only credits from courses taken within 5 (five) years prior to the student's enrollment in PPG-CompMat will be accepted, upon presentation of documentation detailing the syllabus, workload, grade or academic performance, and student attendance, issued by the institution where the credits were obtained.

Art. 28^o - Each semester, PPGC-CompMat will establish the number of available spots for Individual Courses, consulting the professor responsible for each course.

§1^o - The PPGC-CompMat will issue a statement listing the individual course taken by the special student, including its workload, credit value, attendance, and the grade obtained.

§2^o - Students enrolled in the PPG-CompMat may request credit transfer for individual courses completed within the PPG-CompMat, provided they were taken within a maximum of 5 (five) years prior to their enrollment in the Program.

CHAPTER III – ENROLLMENT IN COURSES, VERIFICATION, AND EVALUATION OF ACADEMIC PERFORMANCE

Art. 29^o - Enrollment in courses and activities will be carried out periodically, within the deadlines and terms established by the PPG-CompMat, throughout all phases of study until the title of Master or Doctor is obtained, in accordance with the academic calendar set by the PPG-CompMat.

Single paragraph – The student must enroll in a course or activity each academic term. In semesters when coursework is not required, Master’s students must register for ”Thesis Preparation,” while Doctoral students must register for ”Dissertation Preparation.”

Art. 30^o - Course enrollment cancellation may be granted upon the student’s request, provided it is within 3 (three) weeks of the course’s start, and it will not result in a failing grade.

Art. 31^o - PPG-CompMat students must complete the mandatory Teaching Internship activity in UERJ undergraduate courses related to their interdisciplinary training.

§1^o - Master’s students are required to complete 15 (fifteen) hours of teaching internship, and Doctoral students, 30 (thirty) hours.

§2^o - The Teaching Internship should preferably be conducted in undergraduate courses at the Institute of Mathematics and Statistics.

§3^o - The Teaching Internship supervision must be conducted by a faculty member other than the student’s thesis or dissertation advisor.

Art. 32^o - Performance in each course will be evaluated through exams and/or assignments and expressed in grades according to the following scale:

- A – Excellent (Scores from 9.0 to 10.0)
- B – Good (Scores from 8.0 to 8.9)
- C – Satisfactory (Scores from 7.0 to 7.9)
- D – Deficient (Scores below 7.0)

§1^o - Grades “A,” “B,” and “C” indicate passing in the course, while grade “D” indicates failure.

§2^o - Grade “I” (Incomplete) will be assigned to students who, for justified reasons, fail to complete a minor portion of the required assignments or exams.

§3^o - Grade “I” is temporary and will automatically convert to grade “D” if the assignments or exams are not completed within the deadline set by PPG-CompMat, in consultation with the course professor, and in accordance with item “s” of **Art. 6^o**.

§4^o - External courses will be subject to the credit recognition rules of the institution or Program where the course was taken.

§5^o - A student who fails a mandatory course must retake it the next time it is offered.

Art. 33^o - A student will be dismissed from the PPG-CompMat if they:

(a) fail any course twice;

(b) exceed the maximum period allowed to complete the course, as provided in Article 20 of these

Regulations;

(c) remain unregistered in any course or activity for one academic semester, except when a leave of absence has been granted by PPG-CompMat;

(d) engage in plagiarism or data fraud in any academic work presented as part of the requirements for obtaining a Master’s or Doctoral degree.

Art. 34^o - The final average of a PPG-CompMat student will be the weighted average of the grades obtained in mandatory activities and courses, as well as in elective courses, with each component weighted by the corresponding number of credits.

Art. 35^o - A minimum attendance of 75% (seventy-five percent) is required in each course.

§1^o - For the Master's program, students must attend at least 12 (twelve) academic activities at IME, with the following distribution:

- (a) a minimum of 2 attendances at Qualification Exams;
- (b) a minimum of 3 attendances at Thesis or Dissertation Defenses; and
- (c) a minimum of 7 attendances at IME Colloquia.

§2^o - For the Doctoral program, students must attend at least 24 (twenty-four) academic activities at IME, with the following distribution:

- (a) a minimum of 4 attendances at Qualification Exams;
- (b) a minimum of 6 attendances at Thesis or Dissertation Defenses; and
- (c) a minimum of 14 attendances at IME Colloquia.

Art. 36^o - Registration of a Master's advisor must be completed before the start of the second academic term with the PPG-CompMat Office.

Single paragraph – Any change of advisor must be requested to PPG-CompMat.

Art. 37^o - Registration of a Doctoral advisor must be completed before the end of the second academic term with the PPG-CompMat Office.

Single paragraph – Any change of advisor must be requested to PPG-CompMat.

CHAPTER IV – QUALIFICATION EXAM

Art. 38^o - The evaluation of the Qualification of the Dissertation or Thesis Project will be requested by the candidate to PPG-CompMat through a formal application approved by the Advisor. The maximum period from the beginning of the program for completing the Project Qualification is 18 (eighteen) months for the Master's and 30 (thirty) months for the Doctoral program.

Art. 39^o - The Qualification of the Dissertation Project will be evaluated by a committee composed of at least 2 (two) PhD members, in addition to the Advisor(s). The Qualification of the Thesis Project will be evaluated by a committee composed of at least 3 (three) PhD members, in addition to the Advisor(s).

§1^o - During the evaluation of the Qualification of the Dissertation or Thesis Project, the student must present the content of their work within a period of 40 (forty) to 60 (sixty) minutes. After the presentation, the student will be questioned by the Examination Committee regarding their Dissertation or Thesis Project.

§2^o - As a requirement for qualification, the student must submit a structured document organized in chapters, following UERJ's current formatting standards for Theses and Dissertations. This document should contain an introduction, a detailed presentation of the research problem or object, a literature review, the proposed method or methodology, the planned research stages, and a timeline.

§3^o - During the evaluation of the Qualification of the Dissertation or Thesis Project, the Examination Committee will deliberate, assigning a rating of "APPROVED" or "FAILED," based on the feasibility of the proposed research.

Art. 40^o - In the event of failure in the Project Qualification, new evaluations may be conducted in accordance with the previous article within a maximum period of 60 (sixty) days for the Master's and 120 (one hundred and twenty) days for the Doctoral program, calculated from the date of the first Project Qualification defense.

Single paragraph – If, after the periods specified in the main section of this article, the student has not had their Dissertation or Thesis Project approved, they will be dismissed from the program.

CHAPTER V – PREPARATION, PRESENTATION, AND DEFENSE OF THE DISSERTATION AND THESIS

Art. 41^o - The evaluation of the Dissertation or Thesis can only be requested after completing the required credits, passing the foreign language proficiency exam, achieving the minimum attendance in academic activities at IME, and obtaining approval for the Project Qualification. The request must be submitted by the candidate to PPG-CompMat, with approval from the Advisor.

§1^o - The defense scheduling form, along with the Dissertation or Thesis, must be submitted to the PPG-CompMat Office at least 4 (four) weeks before the proposed defense date.

§2^o - Exceptional cases must be accompanied by written approval from the members of the examining committee.

Art. 42^o - The mandatory requirements for authorizing the Doctoral Thesis defense are that the candidate must be the author of:

(a) a full article, produced during the doctoral program at PPGCompMat, submitted to a journal listed in the JCR (Journal of Citation Reports) or in Qualis CAPES with a ranking higher than B2; and

(b) a full article, produced during the doctoral program at PPGCompMat, published in a nationally or internationally recognized conference.

Single Paragraph – If the journal is considered high-level but is not registered in the JCR or CAPES Qualis, the candidate may request approval from PPG-CompMat, with a detailed justification, for the submission to be accepted as fulfilling requirement (a).

Art. 43^o - It is a mandatory requirement for authorization of the Master's Dissertation defense that the candidate be the author of:

(a) a full article, produced during the Master's program at PPGCompMat, submitted to a journal listed in the JCR (Journal of Citation Reports) or in Qualis CAPES with a ranking higher than B2; or

(b) a full article, produced during the Master's program at PPGCompMat, submitted to a nationally or internationally recognized conference.

§1^o - If the journal is considered high-level but is not registered in the JCR or Qualis CAPES, the candidate may request approval from PPG-CompMat, with a detailed justification, for the submission to be accepted as fulfilling requirement (a).

Art. 44^o - The Master's Dissertation will be evaluated by a committee composed of at least 2 (two) doctoral members, in addition to the Advisor(s), with at least one necessarily external to the PPGCompMat faculty and not a current UERJ employee. In addition to the regular members, the committee must include 2 (two) alternates, with at least 1 (one) external to the UERJ staff.

§1^o - The Advisor shall chair the Master's Dissertation Examining Committee.

§2^o - The members of the Examining Committee must receive a copy of the Dissertation at least 30 (thirty) days before the defense date.

Art. 45^o - The Doctoral Thesis will be evaluated by a committee composed of at least 4 (four) doctoral members, in addition to the Advisor(s), with at least 2 (two) external to the PPGCompMat faculty and not active UERJ staff members. In addition to the regular members, the committee must include 2 (two) alternates, with at least 1 (one) external to the UERJ staff.

§1^o - The Advisor shall chair the Doctoral Thesis Examining Committee.

§2º - The members of the Examining Committee must receive a copy of the Thesis at least 30 (thirty) days before the defense date.

Art. 46º - The composition of the Examining Committee, as well as the date and time of the Dissertation or Thesis defense, must be announced at least 10 (ten) days before the defense.

Art. 47º - The PPG-CompMat shall approve the composition of the Examining Committees, ensuring compliance with the structure indicated in Articles 44 and 45.

§1º - Additional criteria to ensure the quality of committee composition are established in Normative Decision.

§2º - In the absence or impediment of the Advisor, the PPG-CompMat shall appoint a substitute.

Art. 48º - The questioning of the Dissertation or Thesis will be conducted by the Examining Committee in a public session at UERJ. During this session, the candidate must present the content of the work within an interval of 40 (forty) to 50 (fifty) minutes.

§1º - Each Examiner will have a maximum of 20 (twenty) minutes for questioning, and the candidate will have an equal amount of time for responses or rebuttal.

§2º - In evaluating the Dissertation or Thesis, and considering aspects of originality, methodological adequacy, and contribution to knowledge, the Examining Committee shall deliberate, assigning the designation “APPROVED,” “APPROVED WITH RESTRICTIONS,” or “FAILED.”

§3º - Upon conclusion of the evaluation, the Examining Committee must record the results in a report and forward it to PPG-CompMat for ratification.

§4º - In the case of “APPROVED WITH RESTRICTIONS,” the requirements must be recorded in the report, and the student must fulfill them within the timeframe specified by the Examining Committee, which may not exceed 90 (ninety) days. A member of the Examining Committee shall be responsible for verifying that the specified requirements have been met.

§5º - Failure by the student to comply with the previous paragraph within the stipulated period will result in failure of the Dissertation or Thesis defense, with subsequent program dismissal and no title granted.

Art. 49º - Defenses by videoconference are allowed, provided that relevant regulations are observed.

§1º - The defense may be conducted in either English or Portuguese.

§2º - Dissertations and Theses at PPG-CompMat may be written in another language, but an expanded abstract in Portuguese is mandatory.

Art. 50º - The final version of the Dissertation or Thesis, in both printed and electronic formats, must be submitted to the Graduate Program Coordination, in accordance with current standards for the inclusion of Dissertations and Theses in the UERJ Digital Library.

CHAPTER VI – ON THE MASTER’S AND DOCTORAL DEGREES

Art. 51º - A student who meets all the requirements of these Regulations, the current university mandates, and successfully passes the Dissertation or Thesis defense, will be awarded the title of “Master in Computational Sciences and Mathematical Modeling” for the master’s degree, or “Doctor in Computational Sciences and Mathematical Modeling” for the doctoral degree.

TITLE V – GENERAL AND TRANSITIONAL PROVISIONS

Art. 52º - All rights granted by these Regulations to holders of the title of Doctor may also be granted to holders of the title of Livre Docente, as recognized by law.

Art. 53º - These Regulations are subject to the prevailing general rules, as well as those established for the Graduate Programs of the State University of Rio de Janeiro.

Art. 54º - Omissions will be resolved by PPG-CompMat in the first instance, with appeals possible to higher levels within the UERJ organizational structure.

Art. 55º - These Specific Regulations may be reviewed at any time by decision of PPG-CompMat, by a majority decision of the permanent faculty members of PPGCompMat, or in the event of a reformulation of the General Regulations of Graduate Programs at UERJ.

Single Paragraph – The review of these Specific Regulations must be ratified by the Departmental Council and subsequently submitted to the Higher Council for Research, Teaching, and Extension for approval.

ANEXO II

CRENCIAMENTO, DESCREDENCIAMENTO E RECRENCIAMENTO DE DOCENTES

Art. 1º - The accreditation, de-accreditation, and re-accreditation of faculty in the Graduate Program in Computational Sciences and Mathematical Modeling (PPG-CompMat) aim to ensure the quality of its academic and research activities and are based on the guidelines of CAPES, funding agencies, and the academic community.

§1º - The request for accreditation must be formally made by the proponent, accompanied by the Lattes curriculum and copies of the five main works from the last four years, detailing the following aspects:

- (a) Experience and academic production in the fields of Computational Sciences and Mathematical Modeling, as recorded in the Lattes curriculum over the past five years;
- (b) Reasons for wishing to work in PPG-CompMat;
- (c) Courses in PPG-CompMat that the proponent can teach;
- (d) A proposal for a master's dissertation or doctoral thesis in one of the PPG-CompMat research lines that the proponent could supervise.

§2º - The proponent will be eligible for accreditation in the Program as a permanent faculty member if they achieve a GOOD rating in their initial evaluation, according to Article 2 of this Annex, and the faculty members of PPG-CompMat determine, based on the documentation submitted, that the proponent is an active researcher in the areas of the Program.

§3º - A classification of REGULAR in the initial evaluation, according to Article 2 of this Annex, qualifies the proponent for registration as a collaborative or visiting faculty member, at the discretion of PPG-CompMat. The number of collaborative faculty members should not exceed 30% of the total number of faculty in the program.

§4º - The initial evaluation of a proponent for faculty in PPG-CompMat considers only items (a) and (b) of the third paragraph and item (a) of the fourth paragraph of Article 2, except for proponents who were part of the program's faculty (permanent or collaborative) and whose de-accreditation from the Program occurred less than four years prior to the request for new accreditation. In this case, the initial evaluation considers the entirety of the mentioned paragraphs. The initial evaluation is valid until the next faculty evaluation.

Art. 2º - Faculty will be evaluated periodically based on scientific production, completed supervision, and course instruction in PPG-CompMat over the last four years.

§1º - The Technical and Academic Production Index of the Graduate Program in Computational Sciences and Mathematical Modeling (IPPG-CompMat) is defined as follows:

$$\text{IPPG} - \text{CompMat} = \text{IndProd} + 0,5 \cdot \text{IndCoAut} + 0,5 \cdot \text{IndProdDisEg} + 0,25 \cdot \text{IndEvD\&E}$$

(a) The calculation of the indices IndProd, IndCoAut, IndProdDisEg, and IndEvD&E will be established in a Normative Decision.

§2º - The evaluation implies the assignment of the following relative concepts: GOOD, REGULAR, or INSUFFICIENT.

§3º - The GOOD concept is achieved by the faculty member who, simultaneously:

- (a) obtains an IPPG-CompMat compatible with the value defined for this concept in the current Normative Decision for this purpose, aggregated over the last four years;
- (b) has published at least one article in a journal of at least A4 ranking in the latest CAPES Qualis Classification Event in the last two years;
- (c) has supervised or is supervising two or more dissertations or theses of PPG-CompMat students in the last four years;
- (d) has taught two or more courses in PPG-CompMat in the last four years.

§4º - The REGULAR concept is achieved by the faculty member who is not classified as GOOD and who, simultaneously:

- (a) obtains an IPPG-CompMat compatible with the value defined for this concept in the current Normative Decision for this purpose, aggregated over the last four years;
- (b) has supervised or is supervising at least one dissertation or thesis of PPG-CompMat students in the last four years;
- (c) has taught one or more courses in PPG-CompMat in the last four years.

§5º - The faculty member whose performance does not fall under the GOOD or REGULAR concepts is classified as INSUFFICIENT.

§6º - Faculty members who take leave for postdoctoral periods will be evaluated pro rata concerning the period of absence regarding supervision and course instruction.

Art. 3º - The periodic evaluations of faculty in PPG-CompMat will be conducted every two years, considering the four-year evaluation periods of CAPES graduate programs. The evaluation conducted at the midpoint of the CAPES quadrennium will be considered an intermediate evaluation, and the evaluation coinciding with the end of the CAPES quadrennium will be considered a final evaluation.

§1º - Faculty who receive an INSUFFICIENT concept in the intermediate evaluation or two consecutive REGULAR concepts, considering the previous initial or final evaluation, will not be able to take on new student supervisions until the next final evaluation.

§2º - Only the final evaluation will be considered for eligibility as a Permanent Faculty Member and Doctoral Supervisor.

§3º - A final evaluation with a GOOD concept qualifies the faculty member to request registration as a permanent faculty member of PPG-CompMat.

§4º - Obtaining a REGULAR concept in a final evaluation qualifies the permanent faculty member to maintain their accreditation in PPG-CompMat in this category, provided that the faculty member achieved a GOOD concept in the previous intermediate evaluation.

§5º - Three consecutive REGULAR evaluations, considering two final evaluations and one intermediate evaluation, will result in de-accreditation as a faculty member of the Program, upon completing any ongoing supervisions. During this period, even if considered a member of the Program, the faculty member will not be able to start new supervisions but may engage in teaching activities.

§6º - The INSUFFICIENT concept in a final evaluation results in de-accreditation as a faculty member of the Program, upon completing any ongoing supervisions. During this period, even if considered a member of the Program, the faculty member will not be able to start new supervisions but may engage in teaching activities.

§7º - The period for a new accreditation request, if the faculty member has been de-accredited, must be no less than one year from the date of their evaluation.

§8º - The results of the evaluations will be communicated to the faculty members confidentially and individually.

Art. 4º - The accreditation and de-accreditation of faculty in PPG-CompMat will be analyzed and implemented in a manner that respects and maintains the balance in the number of faculty among the areas and subareas of knowledge, which characterizes the interdisciplinary nature of the Program. The assessment criteria may change if the areas of knowledge have nationally and internationally differentiated parameters for faculty production. The PPG-CompMat must issue a substantiated opinion regarding these changes.

Art. 5º - The thresholds for assigning concepts related to both periodic evaluations and eligibility for doctoral supervision will be reduced to half for the Coordinators of PPG-CompMat during their term of coordination and in the subsequent periodic evaluation.

§1º - Faculty members who do not meet the minimum productivity index determined by the PPG-CompMat, based on the criteria presented in this Annex and the corresponding Normative Decision, will be dismissed from the faculty of PPG-CompMat.

§2º - The re-entry of the faculty member into PPG-CompMat will involve the procedure provided in **Art. 8 of Annex I** of this Deliberation.

ANNEX III

EVALUATION AND ACCREDITATION OF SUPERVISORS

Art. 1^o - The main supervisor of course completion works must necessarily be a member of the permanent or collaborating faculty, who may simultaneously supervise a number of students limited by the Supervision Index of PPG-CompMat.

§1^o - For each faculty member, the Supervision Index will equal the sum of the weights of their supervisees (master's and doctorate), accounted for as follows: a supervisee who has only one supervisor from PPG-CompMat has a weight of 1 (one), while a supervisee with two supervisors from PPG-CompMat has a weight of 0.5 (half) for each supervisor, regardless of any external supervisors the student may have.

§2^o - A Permanent faculty member who works exclusively in PPG-CompMat and is not part of another Graduate Program must have a Supervision Index of 6 (six) or lower.

§3^o - A Permanent faculty member who works in another Graduate Program, in addition to PPG-CompMat, must have a Supervision Index of 4 (four) or lower.

§4^o - A Collaborating faculty member must have a Supervision Index in PPG-CompMat of 4 (four) or lower. In the case of supervising a doctorate, this must be done in partnership with a permanent faculty member of the Program as the main supervisor.

§5^o - A Visiting faculty member must have a Supervision Index in PPG-CompMat of 4 (four) or lower. Any supervision must be done in partnership with a permanent faculty member of the Program as the main supervisor.

§6^o - For a Permanent faculty member to be the main supervisor of a doctorate thesis, they must meet the criteria defined in Articles 2^o and 3^o of this Annex.

§7^o - For a Permanent, Collaborating, or Visiting faculty member to co-supervise a doctorate thesis, they must achieve the "GOOD" concept defined in Annex II.

§8^o - Simultaneous supervision of more than 10 (ten) students is not permitted, considering the supervisions in all Graduate Programs in which the faculty member participates.

§9^o - Participation in the joint supervision of Dissertations or Theses by professors not belonging to the PPG-CompMat faculty will be allowed, with the approval of the PPG-CompMat, as long as the percentage of external participation in the number of supervising faculty does not exceed 30

Art. 2^o - To be accredited as a doctorate supervisor, a permanent, visiting, or collaborating faculty member must achieve the GOOD concept in a final evaluation, in accordance with the criteria provided in Annex II.

§1^o - Additionally, to be the main supervisor, the faculty member must have the Supervision Index of the Graduate Program in Computational Sciences and Mathematical Modeling for Main Doctorate Supervision (IPPG-CompMat-D) compatible with the value defined for this index in the current Normative Decision for this purpose, aggregated over the last four years.

§2^o - The IPPG-CompMat-D is calculated as follows: $IPPG-CompMat-D = IndProd + 0.5 \times IndCoAut + 0.5 \times IndProdDisEg$.

Art. 3^o - The accreditation for doctorate supervision will be carried out together with the final evaluation of the faculty members provided in Annex II, based on scientific production, completed supervisions, and teaching in PPG-CompMat over the last four years.

§1^o - The evaluation involves the assignment of the following relative concepts: FIT or UNFIT.

§2^o - The FIT concept is achieved by the faculty member who simultaneously has:

- (a) obtained the GOOD concept according to Annex II;

(b) a compatible IPPG-CompMat-D value defined for this index in the current Normative Decision for this purpose, aggregated over the last four years.

§3^o - A faculty member whose performance does not fit into the FIT category is classified as UNFIT.

§4^o - The UNFIT concept implies a prohibition on assuming doctorate supervisions as the main supervisor. If a faculty member classified as UNFIT has any ongoing doctorate supervision, they will be authorized to complete it. Until the next evaluation, this faculty member will not be allowed to take on new doctorate student supervisions.

Art. 4^o - External faculty members to PPG-CompMat may eventually supervise students jointly with PPG-CompMat faculty members.

Single paragraph – For each activity of an external faculty member in PPG-CompMat, it is necessary that it be requested by a faculty member of the Program, who justifies the relevance of the activity. The Lattes curriculum of the faculty member must be attached to the request. The PPG-CompMat will analyze the quality and benefit of the external faculty member's activity.

ANNEX IV

GRADUATE PROGRAM IN COMPUTATIONAL SCIENCES AND MATHEMATICAL MODELING MASTER'S COURSE SUBJECTS

The subjects of the Master's course are classified into 4 (four) groups numbered in Roman numerals as follows:

I. **Mandatory Courses**

- 1 Linear Algebra: Theoretical and Computational Aspects
- 2 Algorithms

II. **General Basic Formation**

- 1 Algebra
- 2 Distributed Algorithms
- 3 Computer Architectures
- 4 Advanced Calculus and Variational Methods
- 5 Artificial Intelligence
- 6 Logic
- 7 Numerical Methods
- 8 Probability and Statistics
- 9 Parallel and Distributed Programming
- 10 Operating Systems
- 11 Theory of Computation

III. **Elective Basic Formation**

- 1 Scientific Computing
- 2 Software Engineering
- 3 Ordinary Differential Equations
- 4 Partial Differential Equations
- 5 Statistical Mechanics and Complex Systems
- 6 Mathematical and Computational Modeling in Biology
- 7 Computational Neuroscience
- 8 Combinatorial Optimization and Graphs
- 9 Virtual Reality in Computational Science

10 Complex Networks and Dynamic Graphs

11 Neural Networks

12 Knowledge Representation: Ontology

13 Time Series

14 Multi-Agent Systems

15 Computer Vision

IV. Subjects with Variable Syllabus

(a) Special Topics in Computational Science

ACADEMIC MASTER'S COURSE

CURRICULAR STRUCTURE

Mandatory Activities	Department	Workload (h)	Credits
Master's Thesis	IME	45	3
Qualification of the Master's Thesis Project	IME	30	2
Teaching Internship I	IME	15	1
Subtotal		90	6
Mandatory Courses			
Linear Algebra: Theoretical and Computational Aspects	EstMat	60	4
Algorithms	Comput	60	4
Subtotal		120	8
Elective Courses			
Algebra	ESTMAT	60	4
Distributed Algorithms	COMPUT	60	4
Computer Architectures	COMPUT	60	4
Advanced Calculus and Variational Methods	ANMAT	60	4
Scientific Computing	APLCOMPUT	60	4
Software Engineering	COMPUT	60	4
Ordinary Differential Equations	ANMAT	60	4
Partial Differential Equations	ANMAT	60	4
Artificial Intelligence	COMPUT	60	4
Logic	ESTMAT	60	4
Statistical Mechanics and Complex Systems	IME	60	4
Numerical Methods	APL	60	4
Mathematical and Computational Modeling in Biology	APL	60	4
Computational Neuroscience	COMPUT	60	4
Combinatorial Optimization and Graphs	APL	60	4
Probability and Statistics	ESTMAT	60	4
Parallel and Distributed Programming	COMPUT	60	4
Virtual Reality in Computational Science	COMPUT	60	4
Complex Networks and Dynamic Graphs	COMPUT	60	4
Neural Networks	COMPUT	60	4
Knowledge Representation: Ontology	COMPUT	60	4
Time Series	EST	60	4
Operating Systems	COMPUT	60	4
Multi-Agent Systems	COMPUT	60	4
Theory of Computation	COMPUT	60	4
Special Topics in Computational Sciences	IME	60	4
Computer Vision	COMPUT	60	4
Minimum Required		240	16
Total for Completion		450	30

ANNEX V

GRADUATE PROGRAM IN COMPUTER SCIENCE AND MATHEMATICAL MODELING DOCTORAL COURSE SUBJECTS

The courses in the Doctoral program are classified into 4 (four) groups numbered in Roman numerals as follows:

I. **Mandatory Courses**

- 1 Linear Algebra: Theoretical and Computational Aspects
- 2 Algorithms
- 3 Probability and Statistics

II. **General Basic Formation**

- 1 Algebra
- 2 Distributed Algorithms
- 3 Computer Architectures
- 4 Advanced Calculus and Variational Methods
- 5 Artificial Intelligence
- 6 Logic
- 7 Numerical Methods
- 8 Parallel and Distributed Programming
- 9 Operating Systems
- 10 Theory of Computation

III. **Elective Basic Formation**

- 1 Scientific Computing
- 2 Software Engineering
- 3 Ordinary Differential Equations
- 4 Partial Differential Equations
- 5 Statistical Mechanics and Complex Systems
- 6 Mathematical and Computational Modeling in Biology
- 7 Computational Neuroscience
- 8 Combinatorial Optimization and Graphs
- 9 Virtual Reality in Computational Science

10 Complex Networks and Dynamic Graphs

11 Neural Networks

12 Knowledge Representation: Ontology

13 Time Series

14 Multi-Agent Systems

15 Computer Vision

IV. Subjects with Variable Syllabus

1 Directed Study I

2 Directed Study II

3 Special Topics in Computational Sciences

4 Special Topics in Computational Sciences I

5 Special Topics in Computational Sciences II

ACADEMIC DOCTORATE PROGRAM

CURRICULAR STRUCTURE

Mandatory Activities	Department	Workload (h)	Credits
Thesis	IME	45	3
Qualification of Thesis Project	IME	30	2
Teaching Internship I	IME	15	1
Teaching Internship II	IME	15	1
Subtotal		105	7
Mandatory Courses	Department	Workload (h)	Credits
Linear Algebra: Theoretical and Computational Aspects	EstMat	60	4
Algorithms	Comput	60	4
Probability and Statistics	EstMat	60	4
Subtotal		180	12
Elective Courses	Department	Workload (h)	Credits
Algebra	EstMat	60	4
Distributed Algorithms	Comput	60	4
Computer Architectures	Comput	60	4
Advanced Calculus and Variational Methods	ANMAT	60	4
Scientific Computing	APL	60	4
Software Engineering	Comput	60	4
Ordinary Differential Equations	ANMAT	60	4
Partial Differential Equations	ANMAT	60	4
Directed Study I	IME	60	4
Directed Study II	IME	60	4
Artificial Intelligence	Comput	60	4
Logic	EstMat	60	4
Statistical Mechanics and Complex Systems	IME	60	4
Numerical Methods	APL	60	4
Mathematical and Computational Modeling in Biology	APL	60	4
Computational Neuroscience	Comput	60	4
Combinatorial Optimization and Graphs	APL	60	4
Parallel and Distributed Programming	Comput	60	4
Virtual Reality in Computational Science	Comput	60	4
Complex Networks and Dynamic Graphs	Comput	60	4
Neural Networks	Comput	60	4
Knowledge Representation: Ontology	Comput	60	4
Time Series	Est	60	4
Operating Systems	Comput	60	4
Multi-Agent Systems	Comput	60	4
Theory of Computation	Comput	60	4
Special Topics in Computational Sciences I	IME	60	4
Special Topics in Computational Sciences II	IME	60	4
Computer Vision	Comput	60	4
Minimum Required		540	36
Total for Completion		825	55