

DOCTORATE STUDIES IN MATHEMATICAL SCIENCES

3.1 General objective

The general objective of the Doctorate degree is for the student to carry out original and relevant research in mathematics. In this process, the student will develop in-depth knowledge in the specific area of their interest related to the fields of knowledge offered by the study plan.

3.2 Profiles

3.2.1 Income

The applicant:

- Has a deep knowledge of mathematics.
- Is able to do mathematical proofs.
- Understands the fundamental results of a field or subject of mathematics.
- Has knowledge of research methodology that allows you to design a preliminary research project.
- Has the ability to read math texts in English.
- Has a commitment to the excellence of their profession and interest in keeping up to date.

This profile is expected to be fulfilled by students with a master's degree in Mathematics or related to it.

3.2.2 Intermediates

The student having obtained the candidacy for the degree of doctor:

- will have advanced knowledge of mathematics and the field of knowledge of your interest and the ability to stay at the forefront in the development of the discipline.
- will have theoretical-methodological knowledge and management that affect their research project.
- will be able to acquire knowledge that will take you to the frontier of scientific research in your field of interest.
- will master the skills necessary to write a research project clearly.

3.2.3 Egress profiles

The student who graduated from the doctoral program:

- will have knowledge of the frontier of mathematics and the field of knowledge of their interest, as well as the ability to keep up to date with the advances of the discipline.
- will have a research methodology.
- will be able to discern what additional knowledge is necessary to achieve their objectives.
- will have the ability to locate and acquire new knowledge.

3.2.4 Graduate profile

The graduate:

- will be able to set research objectives on the frontier of current scientific knowledge.
- will have a research methodology.
- will be able to make work conjectures and solve them in a novel way.
- will be able to discern what additional knowledge is necessary to achieve their objectives.
- will have the ability to locate and acquire new knowledge.
- will be able to express your research results in written form for experts in the field of knowledge and for research journals.

The work horizon of a doctorate in mathematical sciences is found in higher education institutions and institutions in which research in mathematics or related disciplines is carried out. Likewise, they will be able to apply your knowledge in conducting studies and projects in both the public and private sectors.

3.3 Duration of studies

The proposed curriculum for the Doctorate in Mathematical Sciences:

- It will be taught face-to-face (school system)
- Its duration is up to eight semesters for full-time students and up to ten semesters for part-time students. Period in which the student must accredit all the academic activities of the study plan and obtain the degree.

In the case of a direct doctorate, the duration is up to ten semesters; It can only be taken full time.

Students who complete the following activities will be able to start the procedures to take the degree exam, even before the 8th or 10th semester as appropriate:

- Pass the Candidacy Exam for the Degree of Doctor.
- Accredite the complementary activities foreseen in their semester work plans
- Obtain proof that at least one article of your co-authorship is being considered for publication in a specialized peer-reviewed journal of international prestige.
- Possess proof of having presented the fundamental results of their thesis at an academic event in which academics from the area or a related field of knowledge have participated.
- Finish the thesis with the approval of your Tutor Committee.

3.4 Structure and organization

3.4.1 General description of the academic structure and organization

The objective of the doctoral studies is the training of researchers and for this it is fundamentally based on the mentoring system. A work plan is established between the student, their tutor or main tutors, which is endorsed by their tutor committee. This includes both the development of scientific research and the completion of complementary academic activities (seminars, workshops, teaching activities and

those others that provide a solid academic training) that, in the opinion of the student and the tutor committee, are necessary in the training of the discipline, specifically in the field of interest of the student and prepare it for the Candidacy to the degree of Doctor, in addition to contributing to the development of original research. It should be clarified that there is no minimum or maximum number of academic activities to be carried out either per semester or in all studies. Due to the same structure of the studies, there are no academic activities with serialization.

3.4.2 Work plan

The work plan must consider, at least the following:

1. Accredite the Candidacy Examination to the degree of Doctor, composed of two phases:
 - a) Passing the general exams, at the latest during the third semester.
 - b) Presentation of your research, at the latest during the fifth semester.
2. Preparing a research article, derived from their project, and sending it to a peer-reviewed journal.
3. Public presentation of their research work in an academic event related to the topic developed.
4. Preparation of a thesis and its oral reply in front a specially appointed jury.

3.4.3 Flexibility mechanisms

The doctorate works through a Tutoring System, in which the student together with their main tutor or tutors and endorsed by their tutor committee configures their work plan which must contemplate the aforementioned and may or may not include academic activities, in If these are included, they may be studied in other postgraduate programs inside and outside the UNAM, in accordance with the provisions established in the University Legislation. In the case of external institutions, for this, there must be an academic collaboration agreement. Part of your research work can be done in another entity or institution.

Another mechanism to expand or contribute to the development of research activities during your doctoral studies is the possibility of carrying out research stays at the national level or abroad.

Student mobility

Considering what is indicated in flexibility mechanisms, the study plan opens the possibility to student mobility. Thus, the student, following the procedure for this, may carry out a stay in another institution, study and accredit academic activities in other postgraduate plans of the UNAM, or in other national or foreign higher education institutions, with which the UNAM maintains agreements for this purpose, in accordance with the provisions of current University Legislation, and with the favorable opinion of the Academic Committee.

3.5 Requirements

3.5.1 Income

Applicants who intend to enter the study plan must obtain a letter of acceptance from the Academic Committee of the Program. To do so, they must meet, present and deliver the requirements stipulated below, with the academic criteria indicated in the Program Regulations and with the provisions of the call:

IF THEY ENTER WITH A BACHELOR'S DEGREE (DIRECT DOCTORATE)

1. Bachelor's degree in Mathematics or related degree in the opinion of the Academic Committee.
2. Certificate of full undergraduate studies with an average equal to or greater than 9.0 (nine point zero). In the event that this does not specify it, an official average certificate issued by the institution of origin must also be delivered.

IF THEY ENTER WITH A MASTER'S DEGREE

1. A master's degree in mathematics or one that in the judgment of the academic committee is related.

Aspirants graduated from the Master's Degree in this Program, may enter with 100% and the total of academic activities of credits or with the master's degree certificate.

Applicants who have graduated from other postgraduate programs at UNAM may enter with the master's degree certificate.

Applicants from other higher education institutions may enter with the official certificate that proves that the degree is in process.

2. Complete master's degree certificate with an average equal to or greater than 8.0 (eight point zero). In the event that this does not specify it, an official average certificate issued by the institution of origin must also be delivered.

Based on the academic trajectory and the results in the selection process, the Academic Committee may authorize the entry of applicants with an average lower than 8.0 (eight point zero), as long as said average is equal to or greater than 7.0 (seven point zero).

FOR BOTH TYPES OF INCOME (BACKGROUND STUDIES)

3. Proof that certifies reading comprehension of the English language, issued by the National School of Languages, Linguistics and Translation (ENALLT), other UNAM language centers or international organizations and certifications with which UNAM has academic collaboration agreements for that purpose. In the latter case, the level accredited in the certificate must be at least B1 of the Common European Framework of Reference for Languages.

4. Mandatory documents of an administrative nature, in accordance with the provisions of the call.

5. Academic requirements established in the Program Regulations.

6. Submit to the evaluation mechanisms (exams, interviews, among others that the Academic Committee deems pertinent) provided for in the call in accordance with the provisions of the Program Operating Regulations.

7. Not having been discharged from a graduate program for lack of academic integrity.

Additionally, for applicants who have studied abroad:

8. Proof of equivalence of the minimum average established in the studies of the academic background presented for admission (undergraduate or master's degree), issued by the Dirección General de Incorporación y Revalidación de Estudios (DGIRE) of the UNAM.

9. If the documents are in a language other than Spanish, they must be translated into it by an official Mexican expert.
10. Apostilled or legalized documents, as appropriate in accordance with the provisions of the call instructions.

The accepted applicants must formalize their enrollment as students of the study plan, following the procedure indicated in the corresponding instructions. In the event that an applicant does not complete the registration procedures on time, they will lose their place and must submit to a new call.

3.5.2 Permanence

The permanence of students in the study plan will be subject to the provisions of articles 10, 11, 13, 14, 15, 28, 30, 44 and 45 of the General Regulations for Postgraduate Studies, which literally say:

Article 10. It will be understood that the persons who have not completed the corresponding procedures on the dates established for that purpose renounce their registration or re-registration.

Article 11. Registration or re-registration will be canceled when the total or partial falsity of a document is proven or in the cases provided for in the University Legislation, in which case, all acts derived from them will be rendered ineffective.

Article 13. Students may remain enrolled within the terms established in these Regulations. If you do not complete the compulsory and optional academic activities established in the study plan, the academic committee or the collegiate body in charge of conducting the specialization program will decide whether to withdraw.

The academic committee or the collegiate body in charge of conducting the specialization program, upon request made by the student, may grant an additional term of up to two consecutive semesters immediately after the term established in the corresponding study plan, to conclude the credits and obtain the degree. In no case will this period exceed 50% of the duration of the study plan.

[...]

Article 14. Students may not be enrolled more than twice in a subject or academic activity.

If you enroll twice in the same academic activity without accrediting it, they will be withdrawn from the study plan in which you are enrolled.

Whoever is affected by this provision may request the academic committee or the collegiate body in charge of conducting the specialization program, to reconsider their withdrawal, under the terms and deadlines indicated in the General Guidelines for Postgraduate Operation.

Article 15. The academic committee of the master's and doctoral programs will determine the conditions under which a student will continue in the study plan

when they receive an unfavorable semester evaluation from their tutor, main tutors or their tutor committee. If the student obtains a second unfavorable semester evaluation, he or she will be withdrawn from the study plan.

Whoever is affected by this provision may request the academic committee to reconsider the second negative evaluation, under the terms and deadlines indicated in the General Guidelines for Postgraduate Operation.

Article 28. When a study plan is modified, the student may request in writing to continue and conclude their studies in said plan, provided they do not exceed the times established in these Regulations. The academic committee will decide the number of credits or academic activities that may be recognized.

Article 30. Postgraduate students have the right to:

I. Request during the first two weeks of each school year, the suspension of their studies

Article 30. Postgraduate students have the right to:

I. Request during the first two weeks of each school year, the suspension of their studies for up to two semesters, without affecting the terms provided in these Regulations. The academic committee or the collegiate body in charge of conducting the specialization program may authorize said suspension and extend it in exceptional and fully justified cases. Gender reasons will be particularly addressed;

II. Request their reinstatement in the study plan when they suspend studies without authorization. The academic committee or the collegiate body in charge of conducting the program will determine the origin and terms of the reinstatement. In this case, the total registration time may not exceed the limits established in these Regulations.

III. Request authorization to carry out final exams or evaluations when for duly justified reasons they have not complied with this requirement. The academic committee, the collegiate body in charge of conducting the specialization program, will study the case, and may establish alternative evaluation mechanisms;

IV. Request the academic committee or collegiate body in charge of conducting the specialization program, for justified cause, to change the subject of the degree project, tutor, main tutors or members of the tutor committee, and

V. Submit in writing to the person in charge of the coordination, to the academic committee or to the collegiate body in charge of conducting the specialization program, requests for clarification regarding academic decisions that affect them and receive the answer by the same means within a period of time maximum of thirty business days.

Article 44. Students may enroll in a doctoral study plan to study it full-time or part-time according to the provisions of the corresponding study plan and must complete their studies within the established period, without exceeding eight and ten semesters, respectively.

The doctoral study plans may contemplate the entry of applicants with undergraduate studies, thus being considered as direct doctorates, which may only be completed full time and will last up to ten semesters.

Article 45.- It is considered that the student is a candidate for the degree of doctor when they have demonstrated that they have a solid academic training for research and a high level in the domain of their discipline. The procedure and the deadline for obtaining the candidacy must be defined in the regulations of each postgraduate program.

The requirements and characteristics of the candidacy examination may not be equal to or greater than those required to obtain the degree of doctor.

The jury for the examination of the candidacy for the doctoral degree will be made up of five synodicals and may be carried out with the presence of three, who must meet the requirements established to be a doctoral tutor.

When the evaluation for the candidacy for the degree is negative, the academic committee may authorize a second and final evaluation, which must be carried out in the course of one year, counted from the first evaluation. In case of a second negative evaluation, the student will be dropped from the study plan

Additionally, the student must:

- Deliver the documentation required for re-registration, within the established deadlines.
- Present the degree, no later than for enrollment in the third semester, in the case of students who entered with 100% credits, the exam certificate or proof that the degree is in process.
- Maintain an ethical behavior and not commit serious offenses against academic integrity and university discipline.

The cases not foreseen in the previous points must be analyzed and resolved by the Academic Committee of the Program, in accordance with the provisions of the current University Legislation.

3.5.3 Egress

The student must have satisfactorily passed their exam for the Doctoral Candidacy, completed the entire work plan of their doctoral studies and completed the research project on which their doctoral thesis is based, within the established deadlines.

3.5.4 To obtain the degree

To obtain a doctorate degree, the student must meet the following requirements according to current regulations:

- Meet the graduation requirements.
- Have obtained the candidacy for the degree of doctor.
- Have proof that at least one article of their co-authorship, which contains original results of the thesis, is being considered for publication in a specialized peer-reviewed journal of international prestige.
- Possess proof of having presented the fundamental results of their thesis at an academic event in which academics from the area or a related field of knowledge have participated.

Said event must be endorsed by the Academic Committee of this Program.

- Having prepared a doctoral thesis in an original research with at least four favorable votes from the jury appointed by the Academic Committee.
- Present and pass the doctoral Exam, which will consist of oral defense of the doctoral thesis before a jury appointed by the Academic Committee.
- Deliver the mandatory documents of an academic-administrative nature and carry out the respective procedures in accordance with the provisions of the Institution.
- The student must graduate in the times provided in the study plan. If this is not achieved, you may request the authorization of the Academic Committee to obtain it, following the provisions of the Program Regulations.