AUTONOMOUS UNIVERSITY OF AGUASCALIENTES

PROGRAM[1]

I. PROGRAM IDENTIFICATION

Responsible center:	Health Science Center
Responsible academic departments:	Medicine, Surgery, Optometry, Nutrition, Nursing and Stomatology
Modality:	Traditional - Schooled
Level:	Master´s Degree
Program orientation:	Biomedical Research
Program orientation:	Full Time
Duration:	2 years, divided into 4 semesters
Academic credits:	160
Type of educational program:	Institutional program
Approval date by the HCU[2]:	November 2021

II. QUALITY RECOGNITION

National:	National Postgraduate System (SNP) Nivel: Recent creation

III. PROGRAM OBJECTIVE

Train Masters in Biomedical Sciences with professional ethics with an international focus on Translational Medicine with the capacity for innovation, to identify, analyze and solve problems, under sustainable development, health priorities in an expeditious, applied and multidisciplinary manner, acting with values, social responsibility and humanism.

Specific Objectives

- Form researchers who generate scientific knowledge, which favor the resolution of health problems of the population in the face of new social challenges.
- Increase the number of qualified and technically and methodologically trained human resources, with a critical vision of the various aspects related to biomedical sciences.
- Form researchers to improve clinical practice in different areas of health.
- Focus research projects on solving health problems with the highest national incidence.

Last updated: December 2022

IV. LINES OF RESEARCH

- Molecular and Cellular Biomedicine
- Clinical Biomedicine

V. APPLICANT AND GRADUATE PROFILE

APPLICANT	GRADUATE
Knowledge in: 1. A disciplinary area of cellular and molecular physiology, biochemistry, or genetics. 2. Analysis and interpretation of research articles to determine, with theoretical and methodological rigor, objects of study specific to their discipline.	*Knowledge in:* 1. Comprehensively develop quality scientific research projects in the resolution of health problems. 2. Identify the elements that contribute to the elaboration of a research protocol to improve the health of the patient or of a community. 3. In the cellular and molecular mechanisms associated with the development of human diseases to determine the most efficient therapeutic methods and thus improve the quality of life. 4. Address clinical problems from a molecular and cellular perspective aimed at improving the health of the patient. 5. Evaluate the quality of bibliographic information specialized in the health sciences. 6. Determine the best experimental methodology, with cellular, molecular, and biochemical biology techniques, for the best clinical application. 7. Identify the appropriate statistical tools for data analysis, according to the type of protocol to follow. 8. Knowledge and application of the scientific method. 9. Knowledge of databases and the search for relevant information.
Skills 1. Understand and analyze texts. 2. Communicate orally and in writing. 3. Manage computer equipment, basic software, and computer tools to search for information. 4. Proficiency in reading the English language.	*Skills for:* 1. Development of self-directed learning. 2. The communication of knowledge in oral and written form in specialized forums and to the general public. 3. Generate quality knowledge through ethical scientific research. 4. Promote, through communication with the scientific community, the application of the results of their research in solving problems. 5. Analyze and critically discuss the scientific literature in the health area. 6. Design experiments in the basic biomedical area. 7. Manage the necessary resources to develop the research project. 8. Evaluate new, established, and complex situations in the world of work. 9. Disseminate knowledge with the support of the tutor. 10. Propose projects in solving needs and problems.

Attitude 1. Critical and constructive towards all kinds of problems related to their daily professional practice. 2. Be self-critical or self-critical and tolerant of criticism. 3. To focus their professional activities on the taste for the construction of the necessary knowledge for decision-making, which contribute to the solution of problems in their daily professional practice. 4. With ethical principles towards their professional activity. 5. Disposition for teamwork. 6. Willingness to participate systematically in solving problems from an interdisciplinary perspective.	*Attitude in:* 1. Be open to new knowledge. 2. Accept criticism. 3. Being an entrepreneur or entrepreneur with a high level of initiative. 4. Interest in research and teaching. 5. Willingness and capacity for self-learning. 6. Discipline and perseverance for intellectual development. 7. Interest towards excellence in their training context in search of individual and professional maturity. 8. Critical and purposeful in the analysis of clinical and epidemiological problems of the population. 9. The ability and willingness to work in a group. 10. Leadership, social commitment and service attitude. 11. Critically analyze disciplinary phenomena. 12. Apply intellectual honesty. 13. Respect ideas. 14. Demonstrate professional and research ethics.
Values 1. Respect 2. Liability 3. Honesty 4. Constancy 5. Empathy 6. Ethics	*Values* 1. Scientific value judgment 2. Openness to new knowledge 3. Punctuality 4. Respect for your social environment 5. Humanism 6. Social responsibility 7. Professional ethics 8. Social and labor communication 9. Autonomy and social responsibility. 10. Pluralism 11. Quality 12. Equity and equality 13. Respect for ideas 14. Commitment 15. Attitude to change 16. Tolerance 17. Critical thinking 18. Leadership and self-management

VI. ADMISSION AND SELECTION REQUIREMENTS

ADMISSION

Candidates to enter this master must comply, in addition to what is established in the General Teaching Regulations, with the following requirements:

Admission requirements for national applicants

- Have a minimum average of 8.0 in the studies of the previous level

- Degree in Medicine, Optometry, Stomatology, Nursing, Nutrition, Public Health, Physical Therapy, Biology, Pharmaco-Biological Chemistry, Biochemistry, Biotechnology, Biomedical Engineering or similar.
- Currículum vitae.
- Pass the EXANI III exam with a minimum score of 1,000 points.
- Accredit the TOEFL exam with 450 points; however, if you have 400 you will be able to enter the postgraduate course, but you will have a maximum year to achieve the 450 established points.
- Present the Diagnosis of Postgraduate Skills applied by the Benemérita Universidad Autónoma de Aguascalientes (BUAA).
- Deliver Curriculum Vitae, according to the requirements established by the Academic Council.
- Deliver a letter of explanatory reasons with a maximum length of two pages.
- Submit a preliminary project related to the Lines of Generation and/or Application of Knowledge of the master's degree.
- Meet with the Academic Committee to evaluate qualitative aspects of the admission profile. The modality in which the interview is carried out is determined by the Academic Committee.
- Submit two letters of recommendation to the Academic Council.
- Commitment letter of exclusive dedication to the master's degree, in case of requesting a scholarship.
- If the applicant is working, a letter of support from the institution where he works so that the applicant dedicates himself full time in case of being accepted.
- Accredit the propaedeutic course, which will last 3 weeks.
- Present all the administrative documentation requested by the Department of School Control of the BUAA.
- All applicants must fully comply with the process indicated by the university authorities at the time.

Admission requirements for foreign applicants and foreigners

The admission process is in accordance with what is established by the BUAA in the General Teaching Regulations in force in article 40, clause Vl, it must also consider the following:

1. Have a minimum average of 8.0 (or its equivalent) in the studies of the previous level, consistent with the training that the postgraduate course will provide.
2. It is necessary to have the revalidation of the subjects of the previous level by the Ministry of Public Education.
3. Certificate of complete studies of the previous level (photocopy letter size), apostilled or legalized.
4. Have a degree from the previous level related to the master's degree. This must be accredited by presenting an apostilled and certified professional title, validated by the Department of School Control.
5. Professional license to practice in the Mexican Republic or authorization document to practice the profession in the country where the studies were carried out (front and back photocopy letter size), apostilled or legalized.
6. Accreditation of the TOEFL exam with a score of 450, however, you can enter with a minimum of 400 points, but you will have one year to reach the established 450 points. In the case of foreigners and English-speaking foreigners, they must take the DELE level B-2 exam; however, standardized certificates with international validity equivalent to the language may be accepted.

7. Present the Diagnosis of skills for the Graduate applied by the BUAA. The design, application and modality is carried out by the Admission Committee proposed by the Academic Council.
8. Deliver Curriculum Vitae, according to the requirements established by the Academic Council.
9. Deliver 2 letters of recommendation to the Academic Council.
10. Deliver a letter of explanatory reasons with a maximum length of two pages.
11. Submit a letter of commitment to dedicate full time to the postgraduate course.
12. Present a draft related to the Lines of Generation and Application of Knowledge.
13. Meet with the Academic Committee to evaluate qualitative aspects of the admission profile. The modality in which the interview is carried out is determined by the Academic Committee.
14. Present all the administrative documentation requested by the Department of School Control of the BUAA.
15. All applicants must fully comply with the process indicated by the university authorities at the time.

VII. CURRICULAR STRUCTURE AND ORGANIZATION OF THE STUDY PLAN

Organization of the Study Plan

EJE DE FORMACIÓN	DESCRIPCIÓN DEL EJE DE FORMACIÓN
Basic	It provides the general knowledge, that is, the contextual, methodological and instrumental bases necessary to develop professionally from the postgraduate level.
Disciplinary	They are compulsory subjects that delve into topics or contents of the postgraduate course since their objective is to be a space where students develop and/or master their professional learning.
Terminal	The set of subjects found in the training axis allows students to develop their thesis.
Optative	These subjects may be taken inside or outside the institution at a national or international level in person or online, during the second, third and fourth semesters, they may be chosen by the student with the support of the tutor, with the approval of the Academic Council.
Complementary Activities	They can be carried out from the first to the fourth semester of the master's degree, guided by the tutor or tutor committee according to the orientation and level of this program and based on what is indicated in the operating strategies of the master's degree specified in this document and the technical secretary will validate them.
Institutional identity subjects and activities	They are self-managed online subjects taught by the BUAA, from a catalog that will be offered permanently, and it will be a requirement for the degree to have covered a minimum of two courses.

Curricular Map

Formation axes	Semester/Formative Activities			
	First	Second	Third	Forth
Basic	Fundamentals of Computational Biomedical			
	Fundamentals of Translational Research			
Disciplinary	Molecular Basis of Diseases	experimental methodology	Numerical analysis in biomedicine	
		Dissemination and Scientific Dissemination	Innovation, intellectual property, and technology transfer	
Terminal	Translational Research Methodology	Research Seminar I	Research Seminar II	Research Seminar III
Institutional identity subjects and activities	They are self-managed subjects that can be taken throughout their postgraduate training from an established catalog and must cover a minimum of two courses.			
Optional assignatures		These are subjects that can be taken inside or outside the institution, online or in person, see section 11.5		
*Complementary academic activities	participation in national and international conferences, national or international research stays, among others that are specified in section 11.5			

*Mobility of at least two weeks for students of Study Plans attached to the SNP.

**Note: In the optional subjects, the policies of tutorial subjects will be applied in case of having subjects with less than 10 students, it is desirable to take it in other educational programs.

VIII. PERMANENCE REQUIREMENTS

To ensure their permanence in the postgraduate course, the students must cover the academic and administrative aspects set forth in the BUAA university regulations, carrying out the respective procedures in the Departments of School Control and Funds, in order to be registered as a student. regular postgraduate course within the deadlines determined by these areas.

You must keep in mind that according to what is indicated in the General Teaching Regulations, in case of not accrediting a subject, it must be approved a second time, either with an extraordinary exam, considering that you only have one opportunity to pass the matter owed. The requirements that students must meet for their permanence and continue with their postgraduate studies will be respecting the provisions of the General Teaching Regulations in force at the BUAA in addition to considering the following:

- Attend classes to have the right to present the subjects in the regular exam. The number of absences with which the right to the ordinary or extraordinary exam is lost is considering the hours scheduled per week for each subject. Absences are not justifiable for any reason.
- Each subject must be accredited in the ordinary period with a minimum grade of
- 7.0 (seven) or in an extraordinary exam, considering a single opportunity to pass the subject due, this last element does not apply to seminars.
- Maintain a minimum general average of 8.0 (eight), in addition to accrediting all subjects.
- Have the accreditation of English with the required score.
- The students deliver to the Academic Council a written report of the activities and progress, endorsed by the tutor. The report reflects the progress of the thesis, as well as the advances in the fulfillment of credits: electives and complementary activities. The dates of delivery of the report by each student will be indicated by the Academic Council and the assigned tutor.
- Temporary leave will not be allowed, due to the serious affectation to the terminal and degree efficiency of the National Postgraduate System of the National Science and Technology Council (SNP-CONACyT).
- The student will be definitively withdrawn from the program in the following cases, in addition to what is established by the General Teaching Regulations and current institutional policies:
    - At the request of the student.
    - For not obtaining the degree within the period established in the General Teaching Regulations.
    - Failing to pass the grade exam.
    - Due to non-compliance with the requirements established in the Institutional Regulations.
    - That the student presents serious misconduct or professional ethics towards the institution, tutors, tutors, teachers, workers and university workers, colleagues, and/or causes intentional damage to university facilities.
    - For not passing the thesis or practical work progress seminars.
    - Not complying with or accrediting the stays or complementary activities recommended by the tutor(s) or the tutor(s), according to the study plan.
    - Participate in at least one academic event inside or outside the BUAA by presenting a paper regarding their research work, which may be the BUAA International Postgraduate Research Congress.
    - Carry out relevant social and academic remuneration activities if you are a scholarship recipient.

IX. REQUIREMENTS FOR OBTAINING THE DEGREE

To obtain a master's degree, the following requirements must be met:

- Pass all the subjects, seminars and activities indicated in the study plan.
- Comply with the complementary academic activities (optional credits and complementary activities) according to what is indicated in the study plan.
- Obtain a minimum general grade point average of 8.0 (eight).
- Have at least two institutional identity courses. Promoted by the postgraduate support department.
- Submit and defend the degree work in a public degree exam and pass it on time and in the manner established in the Postgraduate Guidelines and Procedures Manual for the preparation of Thesis or Practical Work and in accordance with the general teaching regulations.
- Comply with what is indicated by the General Teaching Regulations and current institutional regulations on obtaining the degree.
- Have the status of sending an article derived from the thesis to a journal that is at least refereed or demonstrate the process of registering a patent.

To guarantee the excellence and terminal efficiency of the postgraduate course, progress will be supervised by the Technical Secretary. Expanding communication with students and teachers. And any action to be carried out, always attached to the General Teaching Regulations.

X. BASIC ACADEMIC CORE

Grade	Name	Institution of the last degree	Cuerpo académico	PRODEP	SNI	LGAC
Doctorate	Barba Gallardo, Luis Fernando	Meritorious Autonomous University of Aguascalientes	vision sciences	Yes	-	Molecular and Cellular Biomedicine. clinical biomedicine
Doctorate	Gutiérrez Navarro,Omar	Autonomous University of San Luis Potosi	Applied Technological Research	Yes	-	clinical biomedicine
Doctorate	Guzmán Valdivia,César Humberto	National Technological of Mexico	Applied Technological Research	-	I	clinical biomedicine
Doctorate	Martín del Campo Cervantes, Judith	University of Guanajuato	Biomedicine	Yes	-	clinical biomedicine
Doctorate	Masuoka Ito, David	Tokyo Medical and Dental University	Biomedicine	Yes	I	Molecular and Cellular Biomedicine. clinical biomedicine
Doctorate	Ramírez Orozco, Ricardo Ernesto	University of Guanajuato	Biomedicine	Yes	C	Molecular and Cellular Biomedicine. clinical biomedicine
Doctorate	Rosas Cabral, Alejandro	CINVESTAV	Biomedicine	Yes	-	Cellular and clinical Biomedicine.
Doctorate	Rubio Cerda, Eduardo	National Autonomous University of Mexico	Applied Technological Research	Yes	I	clinical biomedicine

SNI = National System of Researchers. PRODEP = Program for Teacher Professional Development. 56
CINVESTAV = Center for Research and Advanced Studies of the National Polytechnic Institute. LGAC = Lines of Generation and Application of Knowledge.

XI. FLEXIBILITY OF THE STUDY PLAN

In coherence with the Educational Model of the Meritorious Autonomous University of Aguascalientes (BUAA) and with national and international trends in the design of educational programs, the master's degree offers flexibility in several important aspects. The flexibility of the MIB Study Plan is observed in the following characteristics:

- The subjects do not have serialization.
- The program is designed to have distance support with external professors and professors through academic collaborations.
- The program can revalidate subjects from similar programs, according to the evaluation carried out by the Academic Council on the contents of said subject, in accordance with the General Teaching Regulations of the institution.
- There are optional credits that will be carried out inside or outside the institution according to the needs of each student, with prior authorization and recommendation from the tutor.

- The students will be able to participate or attend conferences in a distance mode, which allows each student to disseminate their knowledge in conferences that distance does not allow them to attend, likewise, they will be able to receive knowledge from anywhere in the world that They may be useful both in their training and in their thesis.

The propaedeutic course has no value as elective credits and complementary activities, it will allow the student's knowledge to be validated and it will be an admission requirement to pass it.

The master's degree has optional credits and complementary activities, which can be covered both inside or outside the BUAA, nationally or internationally, always endorsed by your tutor and the Graduate Academic Council. In case of being subjects within the BUAA, it should be considered that they must have a minimum of ten students to be implemented. The optional credits can be covered between the second and fourth semesters.

UNIVERSIDAD AUTONOMA DE AGUASCALIENTES

Members of the Committee

Dr. Francisco Javier Avelar González
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Dr. Ricardo Ernesto Ramírez Orozco
Secretary of Research and Graduate Studies of the Center for Health Sciences,
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Generation 2020-2021