

UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN

School of Medicine and University Hospital
"Dr. José Eleuterio González"

INFORMATIONAL BROCHURE

BACHELOR'S DEGREE IN CLINICAL CHEMISTRY



1ST EDITION
MARCH 2026

DEAN'S MESSAGE

The School of Medicine and the University Hospital 'Dr. José Eleuterio González' of UANL constitute a university institution where science and humanity meet every day. Here, our undergraduate students receive training in an academic environment that is human, patient-centered, and committed to the reality of our community.

Our institution harmoniously integrates teaching, research, and healthcare in an environment that fosters critical thinking, active learning, and comprehensive training. Here, each student takes a leading role in the educational process, developing professional competences grounded in science, human sensitivity, and social responsibility.

Education in the health sciences involves understanding the dignity of the person, acting with integrity, and maintaining a permanent attitude of updating and self-criticism. For this reason, we promote an inclusive, innovative academic culture oriented toward continuous improvement, where knowledge gains meaning when it is placed at the service of others.

To those who aspire to join our undergraduate programs, we extend an invitation to build their professional project in an institution that honors its tradition, strengthens the present, and projects the future with vision and commitment. Being part of this School means assuming both the privilege and the responsibility of contributing to the well-being of our society.



Oscar Vidal Gutiérrez, MD, Ph.D.

Dean of the School of Medicine and University Hospital
"Dr. José Eleuterio González" of Universidad Autónoma de Nuevo León

ASSOCIATE DEAN'S MESSAGE

For those seeking a career with profound impact on health and society, the Bachelor's Degree in Clinical Chemistry offers a solid, scientific, and humanistic education. Graduates of this program are distinguished by their mastery of advanced analytical methodologies, their ability to manage specialized technologies, and their capacity to generate biomedical knowledge that drives innovation in the diagnosis and prevention of diseases.

Their training integrates critical thinking, creativity, and professional ethics, enabling them to work effectively in clinical laboratories, hospitals, blood banks, and research centers. In these settings, they carry out hematological, biochemical, immunological, microbiological, toxicological, and molecular analyses with precision and responsibility. In addition, they actively participate in the management of quality systems, ensuring compliance with regulations and the reliability of results that support fundamental medical decisions.

These professionals also stand out for their leadership in interdisciplinary teams and their ability to implement cutting-edge methodologies that contribute to the advancement of human health and environmental sustainability. Their training enables them to identify biomarkers, study pharmacokinetic processes, evaluate risks, and propose scientific solutions that strengthen both individual and collective well-being. With a firm commitment to ethics, effective communication, and continuous improvement, the clinical chemist becomes an essential bridge between laboratory science and patient care, generating evidence that transforms lives and promoting a professional practice that is responsible, innovative, and future-oriented.

Jorge Martín Llaca Díaz, Ed.D.

Associate Dean for Academic Affairs,
Clinical Chemistry Degree Program

Marsela Garza Tapia, Ph.D.

Coordinator of Academic Affairs,
Clinical Chemistry Degree Program



LQC ADMINISTRATIVE STAFF



Jorge Martin Llaca Díaz, Ed.D.

Associate Dean for Academic Affairs,
Clinical Chemistry Degree Program



Marsela Garza Tapia, Ph.D.

Coordinator of Academic Affairs,
Clinical Chemistry Degree Program

LQC ADMINISTRATIVE STAFF



María de Lourdes Garza Rodríguez, Ph.D.
Coordinator of Social Service and Professional Practice,
Clinical Chemistry Degree Program



Diana Guadalupe Robles Espino, Ed.D.
Coordinator of Outreach, Exchange and Tutoring,
Clinical Chemistry Degree Program

AXIOLOGICAL FRAMEWORK OF THE SCHOOL OF MEDICINE



MISSION

To train health professionals with academic excellence in the various disciplines of biomedical sciences so that they may carry out their healthcare, teaching, and research tasks for innovation within an ethical, humanitarian, and inclusive framework, with a strong spirit of service and social responsibility, possessing the capacity for self-criticism and continuous updating of their knowledge, thereby strengthening their comprehensive development.

VISION

By the year 2030, the UANL School of Medicine is the country's leading institution in education, research, and health services. It is socially responsible and internationally competitive, recognized for the quality of its comprehensive training, its relevance in addressing sustainability, and its innovative scientific and technological contributions to the field of biomedicine for the benefit of diverse population sectors.

VALUES

- Responsibility
- Justice
- Freedom
- Equality
- Truth
- Honesty
- Tolerance
- Solidarity
- Respect



ATTRIBUTES OF THE SCHOOL OF MEDICINE

- Critical thinking
- Search for truth
- Ethical behavior
- Analytical thinking
- Academic rigor
- Collaborative work across multiple, interdisciplinary, and transdisciplinary fields
- Gender perspective
- University social responsibility
- Practice of planning and evaluation
- Legality
- Transparency, access to information, and accountability



ORIGIN OF THE SCHOOL OF MEDICINE

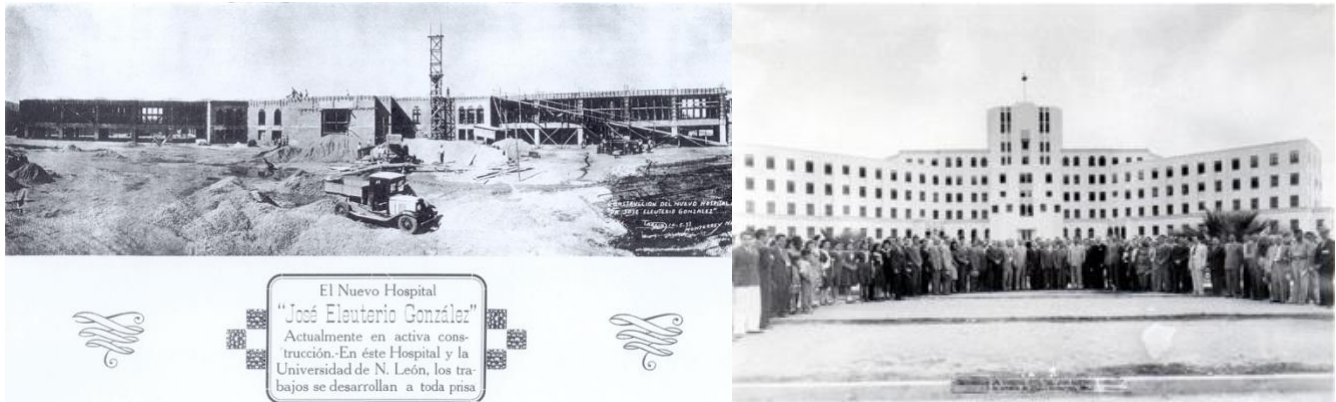
Since its foundation, the School of Medicine has recognized clinical field practice as a fundamental axis of medical training, carried out primarily at the University Hospital 'Dr. José Eleuterio González.' This historic link between teaching and hospital care has allowed generation after generation of students to complement their theoretical training with direct experience in diagnostic and therapeutic processes, actively participating in patient care under the guidance of their professors.



Dr. José Eleuterio González founded the School of Medicine on October 30th, 1859, and in 1860 the first Civil Hospital of Monterrey opened its doors, thus consolidating the foundations of medical education in the region.



Decades later, in 1932, during the government of Francisco Cárdenas, construction began on a new hospital in the western part of the city. It started operating partially in 1938 and was fully inaugurated in 1943.



At the end of the 1940s, the current building of the School of Medicine was constructed next to the Hospital and inaugurated in 1952. That same year, by decree of the State Congress, the Civil Hospital was transferred to the University of Nuevo León and converted into the Clinical Department of the School of Medicine, giving rise to the first University Hospital in the country.



ORIGIN OF THE BACHELOR ´S DEGREE IN CLINICAL CHEMISTRY

On June 30, 1948, Dr. Roberto Treviño Martínez, dean of the School of Medicine, requested authorization from the rector to begin the Clinical Laboratory Technician program in September of that same year; the first class consisted of 13 students, mostly women, which from the very beginning marked a notable female presence.

Due to technological advances in the field, the original three-year curriculum was extended in 1965 to four years, and that same year the program was certified by the General Directorate of Professions of the Ministry of Public Education, also incorporating one year of social service. Later, given the technical connotation of the original name, graduates requested its modification, which was approved on April 28, 1982 by the Honorable University Council, and since then the degree has been awarded under the title of Clinical Chemist Biologist.

Finally, with the purpose of strengthening academic training and responding to current demands of the job market, in 2025 the LQC 2025 Curriculum came into effect, aimed at the education of graduates in Clinical Chemistry.



BACHELOR´S DEGREE IN CLINICAL CHEMISTRY

ADMISSION PROFILE

Applicants to the Bachelor's Degree in Clinical Chemistry are expected to show and embody the following characteristics:

I. ASSESSABLE CHARACTERISTICS

- Solve problems using analytical reasoning.
- Communicate ideas effectively in both oral and written form.
- Apply logical-mathematical thinking.

II. DESIRED CHARACTERISTICS

- Achieve proficiency in English at a B1 level.
- Work in multidisciplinary teams.
- Manage study time and fulfill academic responsibilities.

ADMISSION REQUIREMENTS

ACADEMIC REQUIREMENTS

- Have successfully completed the high school level or equivalent.

LEGAL REQUIREMENTS

- Those established by the current regulations and procedures of the UANL, or others, if applicable.

SELECTION REQUIREMENTS

- The student must take the Entrance Examination established by UANL.

SPECIFIC REQUIREMENTS OF THE DEGREE PROGRAM (for admitted students)

- Take the English language placement examination (EXCI).
- Those established by the current regulations and procedures of the School of Medicine:
 - a) Take a diagnostic English exam.
 - b) Take a diagnostic exam in mathematics, biology, and chemistry.
 - c) Attend the induction course.

GRADUATE PROFILE

PURPOSE

To train highly skilled professionals in Clinical Chemistry who are committed to excellence in the development and application of advanced analytical methodologies, the management of specialized technologies, and the generation of biomedical knowledge. These professionals integrate scientific rigor, critical thinking, and creativity in an ethical and collaborative environment, promoting innovative scientific solutions that contribute to human health care, disease prevention, and treatment.

They have theoretical and practical competences to perform high-precision clinical analyses, covering hematological, biochemical, immunological, microbiological, toxicological tests, as well as molecular testing in hospital laboratories, analytical labs, and blood banks, both public and private. They also manage quality assurance systems in accordance with current regulations.

They have the ability to lead interdisciplinary initiatives, promote biomedical research in key areas such as the identification of biomarkers, the study of pharmacokinetics, and clinical toxicology, among others. In addition, they play a fundamental role as a link between laboratory science and patient care. Their work has a positive impact on individual well-being, health equity, and environmental preservation.

GENERAL COMPETENCES

INSTRUMENTAL COMPETENCES

1. To apply autonomous learning strategies at different levels and fields of knowledge that allow them to make timely and relevant decisions in the personal, academic and professional spheres.
2. To use logical, formal, mathematical, iconic, verbal and non-verbal languages according to their stage of life, to understand, interpret and express ideas, feelings, theories and currents of thought with an ecumenical approach.
3. To manage Digital Information, Communication, Knowledge and Learning Technologies (TICCAD), in academic, personal and professional environments with cutting-edge techniques that allow their constructive and collaborative participation in society.

4. To master their mother tongue orally and in writing with correctness, relevance, timeliness and ethics, adapting their message to the situation or context, for the transmission of ideas and scientific findings.
5. To use logical, critical, creative and proactive thinking to analyze natural and social phenomena that allow them to make relevant decisions in their sphere of influence with social responsibility.
6. To use a second language, preferably English, clearly and correctly to communicate in everyday, academic, professional and scientific contexts.
7. To develop inter, multi and transdisciplinary academic and professional proposals in accordance with the best global practices to promote and consolidate collaborative work.
8. To use traditional and cutting-edge research methods and techniques for the development of their academic work, the exercise of their profession and the generation of knowledge.

PERSONAL AND SOCIAL INTERACTION COMPETENCES

9. To maintain an attitude of commitment and respect towards the diversity of social and cultural practices that reaffirm the principle of integration in the local, national and international context in order to promote environments of peaceful coexistence.
10. To intervene in the face of the challenges of contemporary society at the local and global level with a critical attitude and human, academic and professional commitment to contribute to consolidating general well-being and sustainable development.
11. To practice the values promoted by the UANL: truth, equity, honesty, freedom, solidarity, respect for life and others, peace, respect for nature, integrity, ethical behavior and justice, in their personal and professional environment to contribute to building a sustainable society.

INTEGRATIVE COMPETENCES

12. To make innovative proposals based on a holistic understanding of reality to help overcome the challenges of the interdependent global environment.
13. To assume leadership roles committed to social and professional needs in order to promote relevant social change.
14. To resolve personal and social conflicts, in accordance with specific techniques in the academic field and in their profession for appropriate decision-making.

15. To achieve the adaptability required by the uncertain social and professional environments of our time to create better living conditions.

SPECIFIC COMPETENCES

1. To conduct clinical analyses through the application of validated procedures, the management of specialized technologies, and adherence to quality standards, in an environment that fosters effective communication, problem-solving, and collaboration with other health professionals, to ensure reliable results in clinical diagnosis and health monitoring.
2. To implement analytical methodologies by integrating cutting-edge technological tools, respecting established protocols and ensuring that the results meet the required standards, applying creativity and critical thinking, to promote scientific solutions that significantly contribute to the improvement of human health and environmental sustainability.
3. To manage quality assurance and continuous improvement systems through the effective use of quality control tools and risk analysis, ensuring compliance with current regulations, as well as established standards, and exercising ethical leadership and multidisciplinary work to optimize processes and guarantee reliable results in the health sector.
4. To generate biomedical knowledge through the application of the scientific method and the use of innovative analytical techniques, ensuring compliance with ethical and regulatory norms, acting with social responsibility, enhancing proactive thinking to contribute effectively to the prevention, diagnosis, and treatment of diseases, and promoting significant advances in the healthcare field.

CAREER OPPORTUNITIES

PROFESSIONAL SETTINGS	TASK DESCRIPTION
Clinical Laboratory	<ul style="list-style-type: none"> ● Processes clinical samples. ● Manages the quality of processes. ● Organizes administrative activities. ● Coordinates the provision of services and resources in a healthcare setting. ● Complies with current regulations. ● Coordinates staff for the proper functioning of a laboratory. ● Designs analytical methods. ● Optimizes analytical methods. ● Validates analytical methods. ● Contributes to the logistical processes of research and teaching.
Clinical Biochemistry, Hematology, Microbiology, Immunology, Endocrinology, Molecular Biology, Toxicology, Forensics, Andrology, and Reproductive Biology.	
Blood Bank	<ul style="list-style-type: none"> ● Collaboratively selects donors. ● Performs phlebotomy. ● Manages adverse reactions. ● Fractions blood components. ● Conducts donor serology. ● Executes compatibility testing. ● Releases safe blood units. ● Manages blood component exchange. ● Manages quality processes.
Toxicological, Bioequivalence, Forensic, and Food.	
Analytical Laboratory	<ul style="list-style-type: none"> ● Develops analytical methods. ● Optimizes analysis methodologies. ● Validates analytical methods. ● Implements analytical procedures. ● Applies current regulations. ● Manages quality processes. ● Coordinates the provision of services and resources. ● Coordinates personnel for the smooth operation of a laboratory.
Toxicological, Bioequivalence, Forensic, and Food.	

Analytical Services and Consultancies

- Coordinates internal and external audits of a service.
- Manages quality processes of a service.
- Develops actions for sales growth in a company.
- Provides application support and customer service in a company.
- Assists in the activities of the finance department and personnel management of a company.
- Coordinates research studies in the productive sector.

GRADUATE REQUIREMENTS

ACADEMIC REQUIREMENTS

- Completion of **all 242 credits** in the curriculum.
- Completion of the mandatory social service.

LEGAL REQUIREMENTS

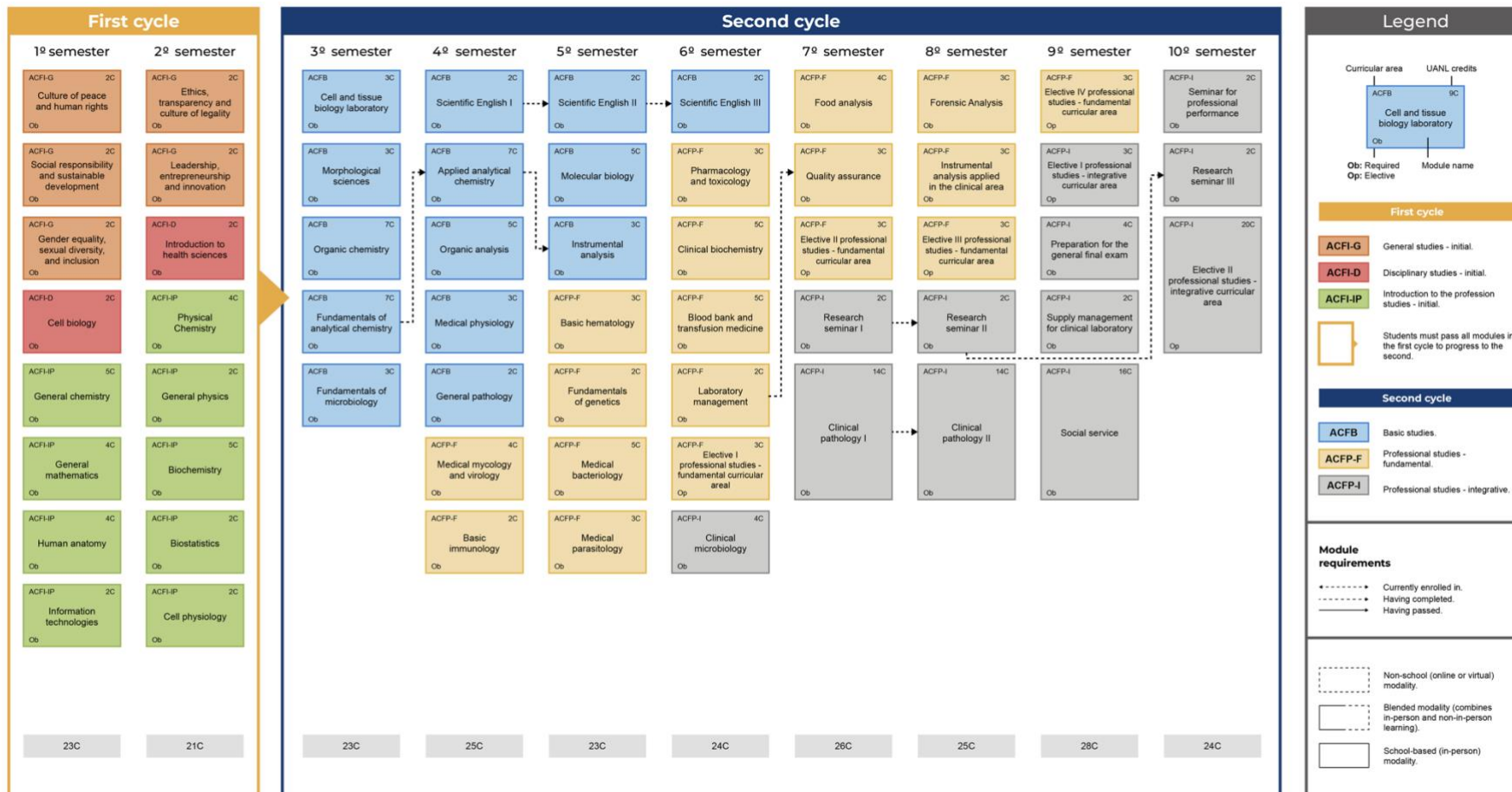
- Those established by the current regulations and procedures of the UANL, or others, if applicable.



SPECIFIC REQUIREMENTS OF THE DEGREE PROGRAM

- Take the undergraduate exit examination.
- Complete the comprehensive training activities, in accordance with the guidelines and procedures established by the School of Medicine and the Autonomous University of Nuevo Leon (UANL).
- Demonstrate the development or strengthening of proficiency in a foreign language through completion of the institutional program for learning the English language.

CURRICULUM MAP



ELECTIVE MODULES

CURRICULAR AREA	MODULE
ACFP-F Elective I	<ul style="list-style-type: none"> • Epidemiology • Molecular medicine • Applied instrumental analysis • In vitro and in vivo experimental models
ACFP-F Elective II	<ul style="list-style-type: none"> • Molecular pathology • Design and analysis of biochemical experiments • Andrology and assisted reproduction laboratory • Surveillance and control of emerging pathogens
ACFP-F Elective III	<ul style="list-style-type: none"> • Hepatology, oncology, and rheumatology • Statistics applied to clinical laboratory • Cytogenomics
ACFP-F Elective IV	<ul style="list-style-type: none"> • Infectiology, endocrinology, and nephrology • Bioinformatics tools and omics sciences • Strategic business planning
ACFP-I Elective I	<ul style="list-style-type: none"> • Advanced topics in histomorphological sciences • Advanced immunohematology • Bioequivalence and interchangeability studies
ACFP-I Elective II	<ul style="list-style-type: none"> • Professional practices • Research internships

NATIONAL AND INTERNATIONAL ACCREDITATIONS



National Council for the Evaluation of Chemical Sciences (CONAECQ)

- From October 2025 to October 2030



Inter-Institutional Committees for the Evaluation of Higher Education (CIEES)

- From July 2022 to July 2027



Accreditation Agency for Study Programmes in Engineering, Informatics, Natural Sciences and Mathematics (ASIIN)

- From September 2025 to October 2026



EDUCATIONAL PROGRAM INFRASTRUCTURE

SCHOOL OF MEDICINE

Teaching laboratories in areas such as: Analytical chemistry and Organic chemistry, Microbiology, Morphological sciences, Molecular biology, among others.



UNIVERSITY HOSPITAL

Central Laboratory, Blood Bank, Hematology Laboratory, Basic-Clinical Research Laboratory (LIBAC), Liver Unit Laboratory, Endocrinology Laboratory.



STUDENT SERVICES

CENTER FOR SELF-DIRECTED LANGUAGE LEARNING (CAADI)

The CAADI promotes the development of foreign language skills as a fundamental part of the students' comprehensive education. Through the management of English modules within the curriculum, the offering of extracurricular courses in languages such as German and French, and the implementation of the Institutional Program for Learning the English Language (PIAII) in a self-directed modality, CAADI strengthens linguistic proficiency and the academic profile of future professionals.

It also organizes and oversees the administration of the English Proficiency Exam (EXCI), ensuring compliance with institutional graduation requirements and promoting internationalization, academic mobility, and the global projection of its students.



UNIVERSITY TALENT PROGRAM



The University Talent Program identifies, supports, and accompanies students with outstanding academic performance, integrating them into the UANL Institutional Program for the Development of University Talent at the undergraduate level.

Through processes such as the detection of exceptional profiles, informational sessions, admission management, academic follow-up, and recognition ceremonies for continued participation, the program fosters the strengthening of students' skills, leadership, and professional projection.

This initiative provides opportunities for academic and personal growth, encourages excellence, and acknowledges sustained commitment, consolidating a student community distinguished by merit and high potential.

PEDAGOGICAL SUPPORT

The Pedagogical Support area provides academic guidance through workshops designed to strengthen students' study skills and school performance. Among its main initiatives is the Basic Skills Workshop for Effective Study, which addresses topics such as stress and procrastination management, strategic time organization, the influence of emotions on learning, and the application of study techniques.



These activities enable students to develop practical tools to optimize their academic performance, support their adaptation to university life, and consolidate solid study habits throughout their professional training.



OFFICE OF STUDENT SCHOLARSHIPS AND SUPPORT

The Office of Student Scholarships and Support guides and assists students in accessing various economic and academic support programs, both institutional and external. Available options include scholarships for academic merit, grade point average, effort, sports, workers and children of workers, special scholarships, and nutritional support, in addition to other programs managed by the School and the University.

Through the timely dissemination of calls, personalized advising, and follow-up with beneficiaries, this service facilitates student retention and academic achievement, while promoting equal opportunities and comprehensive support throughout professional training.

LIBRARY

The library offers access to a wide bibliographic collection and specialized resources that support students' academic training and research. It features reading rooms, internal and external book lending, thesis consultation, reference materials, and access to scientific databases and high-impact journals. In addition, it provides support in bibliographic searches, citation management, and the use of digital resources, strengthening the information skills necessary for study and professional practice. With extended hours and suitable spaces for both individual and collaborative learning, the library is consolidated as a fundamental support throughout the academic path in the university.

SCHOOL OF MEDICINE SPORTS CENTER

The School of Medicine Sports Center promotes athletic practice and competitive development as an essential part of students' comprehensive education. Through active participation in intra-university and external tournaments, the School consistently ranks among the top at UANL, excelling in multiple disciplines thanks to the commitment, discipline, and teamwork of its student athletes. These activities strengthen values such as leadership, perseverance, and sense of belonging, contributing to physical and emotional well-being throughout the university experience.

The student community benefits from modern and exclusive facilities, including the School of Medicine Gymnasium, the University Hospital Gymnasium, an



athletics track with official measurements, padel courts, a central court for official competitions, a recently renovated fast soccer field, and specialized spaces for basketball, volleyball, and martial arts. These facilities, equipped with strength, endurance, and cardio areas, support both competitive training and recreational physical activity, promoting healthy habits and an active university life.

CENTER FOR STUDENT DEVELOPMENT (CEDE)



CeDE is the institutional space dedicated to the comprehensive well-being of undergraduate students. It features modern, air-conditioned facilities specifically designed for the student community, including coworking areas, meeting and collaborative work rooms, relaxation and social spaces, an auditorium, creative areas, and offices for managing student projects. In this environment, students find a safe place to study, meet, organize activities, and strengthen their sense of belonging to the School of Medicine.

CeDE is composed of various offices that work in an integrated manner to support students' education beyond the classroom.

OFFICE OF LEADERSHIP AND RESEARCH IN BIOMEDICAL SCIENCES

Through the Office of Leadership and Research in Biomedical Sciences, student groups, workshops, and symposia are promoted to foster engagement with research and scientific work.

OFFICE OF SOCIAL RESPONSIBILITY AND MEDICAL BRIGADES

Through the Office of Social Responsibility and Medical Brigades, projects with community impact and service actions for society are promoted.

STUDENT PSYCHOLOGICAL SUPPORT CENTER AND COMPREHENSIVE WELLNESS PLAN

The Student Psychological Support Center and the Comprehensive Wellness Plan provide psychological care, emotional support, self-care workshops, and timely referral to specialized services.

OFFICE OF CULTURAL AND ARTISTIC OUTREACH AND OFFICE OF PHYSICAL AND SPORTS ACTIVITIES

The Office of Cultural and Artistic Outreach and the Office of Physical and Sports Activities encourage participation in cultural, recreational, and sports activities, strengthening healthy habits and social interaction.

COMPREHENSIVE TRAINING ACTIVITIES AND GENDER EQUALITY

Finally, through the Comprehensive Training Activities Program and the liaison with the Gender Equality Unit, formative activities are recorded and promoted, in addition to addressing and referring situations related to equality, respect, and the prevention of gender-based violence. Together, CeDE offers a support network that fosters the academic, personal, and social development of students throughout their university life.