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FCEFyN

FACULTAD DE CIENCIAS EXACTAS, FÍSICAS Y NATURALES

Universidad Nacional de Córdoba

Facultad de Ciencias Exactas, Físicas y Naturales.

Table of Contents

Universidad Nacional de Córdoba

(1613)

15	Faculties
+90	Degrees
234	Postgraduate programs

+170,000	Students
+10,000	Teaching staff
+3,000	Administration staff

Located in Córdoba city, at the very center of Argentina.

Second most populated city (+3 M).

10% students.

7 universities (public and private)

UNC Campus: 138 Ha.

Major industrial, agroindustrial and technological network.

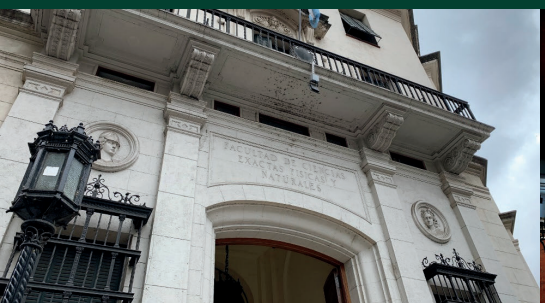
International airport.

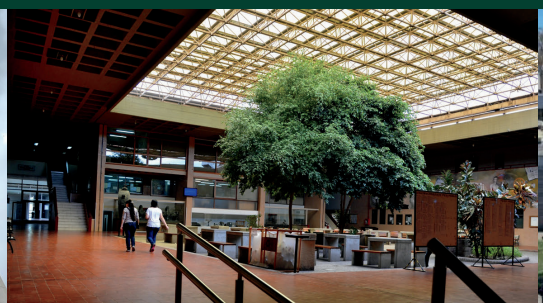
UNC Faculties

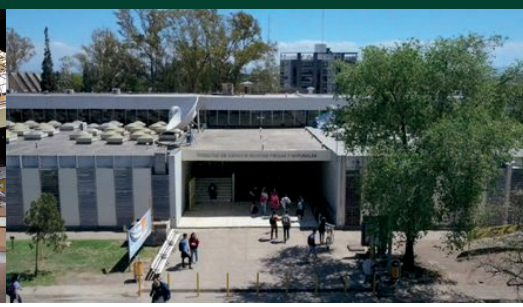
- Law
- Medicine
- **Exact, Physical and Natural Sciences**
- Chemistry
- Physics, Mathematics and Astronomy
- Philosophy and Humanities
- Architecture, Urbanism and Design
- Economic Sciences
- Psycology
- Social Sciences
- Fine Arts
- Odontology
- Agronomy
- Languages
- Communication Sciences

Faculty of Exact, Physical and Natural Sciences

19	Degrees
11	Engineering programs
25	Postgraduate programs
+14,000	Students
+1,200	Teaching staff
+140	Administration staff







5-Year degrees

- Biology
- Geology
- Aerospace Engineering
- Civil Engineering
- Industrial Engineering
- Environmental Engineering
- Chemical Engineering
- Electronic Engineering
- Electromechanical Engineering
- Mechanical Engineering
- Computer Engineering
- Biomedical Engineering
- Land Surveying Engineering
- Hydrometeorology
- Building
- Biological Sciences Education

https://fcefyn.unc.edu.ar/carreras-de-grado/

POSTGRADUATE

PhD Programs

- Biological Sciences
- Engineering Sciences
- Geological Sciences
- Neurosciences
- Science and Technology Education

Specializing masters

- Civil Structures
- Renewable Energies
- Wild Life Management
- Science and Technology Education
- Food Science and Technology
- Water Resources Management
- Engineering Sciences:
  - Structures and Geotechnics.
  - Aerospace.
  - Management.
  - Environment.
  - Transport.
  - Water Resources.
  - Telecommunications.

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Training and Continuing Education Program

- International programs
- 80 extracurricular courses
- 45 diploma programs

3,500 students per year

https://fcefyn.unc.edu.ar/extension/

INTERNATIONALIZATION

DOUBLE DEGREE PROGRAMS

- Politecnico di Torino **(Italy)**
- Università di Salerno **(Italy)**
- Università del Molise **(Italy)**
- ParisTech **(France)**
- École des Mines – Saint-Etienne **(France)**
- ISAE-SUPAERO **(France)**
- École Nationale Supérieure d'Arts et Métiers **(France)**
- Universidad de Alcalá **(Spain)**

Mobility:

- **30+ outgoing** students (per year)
- **50+ incoming** students (per year)

Networks:

- **AUGM** (Grupo Montevideo)
- **MARCA** (MERCOSUR)
- **ARFITEC** (Argentina-France)
- **AUIP** (LatAm-Spain-Portugal)
- **UDUALC** (LatAm & Caribbean)

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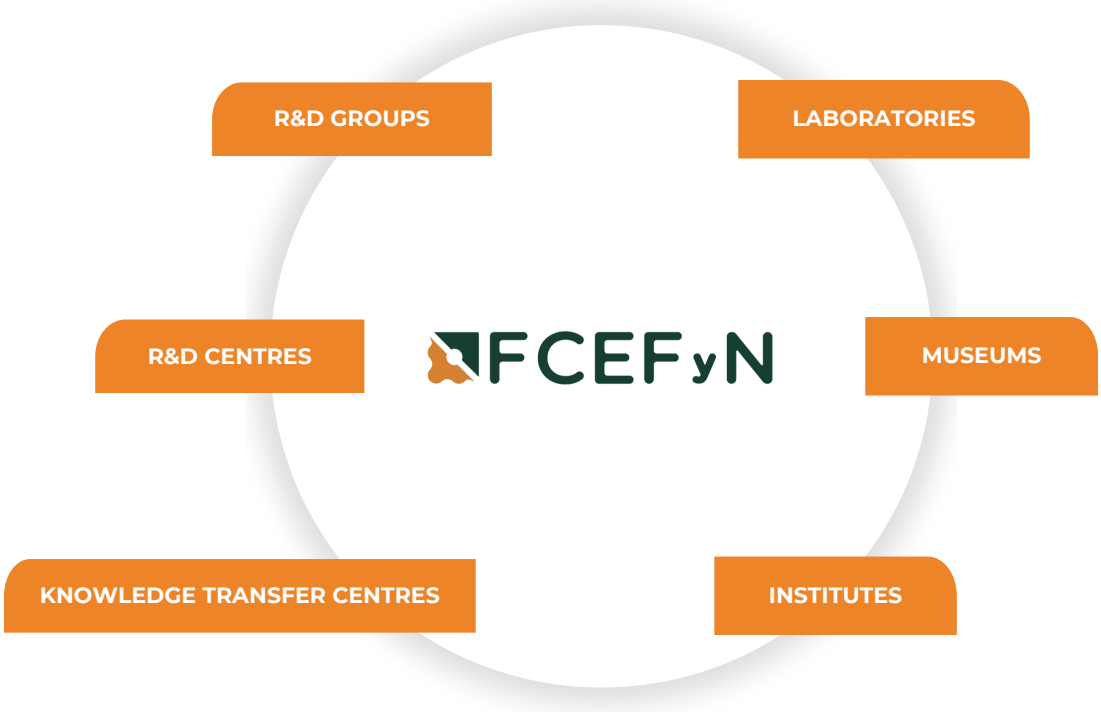
MAIN INTERNATIONAL PARTNERS

Local communities

RESEARCH & TECHNOLOGICAL COOPERATION ECOSYSTEM



Partner Institutions and Organizations

CONICET · INTA · CNEA · APN · INTI · CONAE · GOBIERNO DE LA PROVINCIA DE CÓRDOBA

Learn more: fcefyn.unc.edu.ar/facultad/secretarias/investigacion-y-desarrollo

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RESEARCH:
National institutes

CONICET

Engineering

- **IDIT** – Advanced Studies in Technology and Engineering.
- **IPQA** – Institute for Process Engineering and Applied Chemistry.
- **ICyTAC** – Institute for Food Science and Technology.

Natural Sciences

- **CICTERRA** – Research Center for Earth Sciences.
- **IMBIV** – Multidisciplinary Institute for Plant Biology.
- **IDEA** – Institute for Animal Diversity and Ecology.

- **IIByT** – Institute for Biological and Technological Research.

Learn more:

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Service Offer and Technical Capabilities
FCEFyN | UNC

The Faculty of Exact, Physical and Natural Sciences (FCEFyN) at the National University of Córdoba has a long-standing track record in applied research, technology transfer, technical assistance, technological development, training programs, and continuing education. Each specialization area brings together laboratories, transfer centers, and technical teams capable of providing solutions for local governments, public agencies, cooperatives, and productive sectors.

FCEFYN'S TECHNICAL CAPABILITIES ARE ORGANIZED INTO SEVEN SPECIALIZATION AREAS:

- **Infrastructure and Civil Works**
- **Energy and Public Services**
- **Territorial Development and Planning**
- **Biotechnology and Bioindustrial Processes**
- **Environment and Environmental Management**
- **Digital Transformation and Technological Innovation**
- **Hydraulics and Hydrometeorology**

1. Infrastructure and Civil Works

Key capabilities:

- Materials and structural testing.
- Soil mechanics and geotechnical studies.
- Soil and rock characterization for infrastructure projects.
- Structural stability assessments and building diagnostics.
- Quality control and technical monitoring in civil works.

Applications:

public works, road infrastructure, urban development, construction, and structural maintenance.

2. Energy and Public Services

Key capabilities:

- Electrical testing in low, medium, and high voltage.
- Diagnostics and regulatory compliance verification of electrical installations.
- Power quality and energy efficiency studies.
- Design and evaluation of electrical networks.
- Technical advisory for maintenance and modernization of energy infrastructure.

Applications:

electric cooperatives, municipalities, industries, and public service providers.

3. Territorial Development and Planning

Key capabilities:

- Land-use planning and urban development strategies.
- Land-use studies and sustainable urban growth analysis.
- Cartography, geodata, and geographic information systems (GIS).
- Strategic environmental assessment and territorial analysis.
- Management of urban infrastructure and essential services.

Applications:

municipalities, provincial governments, planning agencies, and regional development institutions.

4. Biotechnology and Bioindustrial Processes

Key capabilities:

- Microbiological analyses and biological characterization.
- Development and validation of bioproducts.
- Optimization of biotechnological processes for industrial applications.
- Testing and studies for agroindustry, food sectors, and environmental applications.
- Technical advisory for the implementation of biotechnological solutions.

Applications:

food industry, agroindustry, environmental firms, and agricultural cooperatives.

5. Environment and Environmental Management

Key capabilities:

- Environmental impact assessments.
- Monitoring of carbon, water, soil, and air.
- Hydro-environmental modeling and risk analysis.
- Waste management and remediation advisory.
- Environmental diagnostics and planning.

Applications:

public works, industries, local governments, and regulatory agencies.

6. Digital Transformation and Technological Innovation

Key capabilities:

- Process digitalization and automation.
- Software development and digital solutions.
- Integration of Industry 4.0 technologies.
- Data analysis and decision-support systems.
- Institutional innovation and organizational modernization.

Applications:

municipalities, SMEs, cooperatives, educational institutions, social organizations, and companies.

7. Hydraulics and Hydrometeorology

Key capabilities:

- Hydraulic studies of rivers, channels, urban drainage, and conveyance systems.
- Physical and numerical hydraulic modeling for infrastructure design and optimization.
- Hydrological and hydrometeorological analyses: precipitation, storms, runoff, and extreme events.
- Assessment and planning of urban drainage and stormwater management systems.
- Water resource management and availability studies.
- Flood risk assessments, hydrological hazards, and climate vulnerability analysis.
- Technical advisory on the design, operation, and maintenance of hydraulic works.

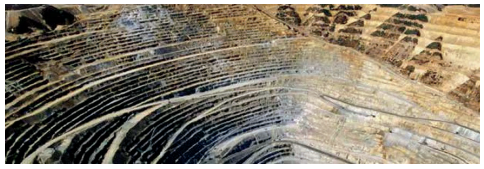
Applications:

municipalities, service cooperatives, water resource agencies, public works departments, urban infrastructure projects, climate-risk management, watershed planning, and sanitation initiatives.

R&D Activities and Technical assistance

BIOLOGY AND EARTH SCIENCES

- Ecology.
- Entomology: mosquitoes, pollinating insects.
- Applied zoology and species conservation.
- Wildlife management and restoration.
- Collaboration with national parks and natural reserves.
- Applied biogeography.
- Extraction and characterization of natural products.
- Geochemistry and surface processes.
- Geomatics and geophysics applied to oil and gas production.


R&D Activities and Technical assistance

CIVIL & ENVIRONMENTAL ENGINEERING

- Geotechnics and structures.
- Infrastructure – Major works assessments.
- Materials testing.
- Environmental impact.
- Water resources management.
- Hydraulics.
- Hydrometeorology and hydrobiology.
- Transport.
- Public services.
- Renewable energies generation.
- Territorial studies.



R&D Activities and Technical assistance

AEROSPACE & AERONAUTICS

- Computational fluid dynamics (CFD).
- Technical, safety and environmental aspects in spatial missions.
- Satellite radar imaging.
- Cooperation with The National Space Agency (CONAE) and companies.

R&D Activities and Technical assistance

ELECTRONICS & COMPUTER SCIENCE

DIGITAL COMMUNICATIONS LABORATORY (LCD)

- High-speed optic fiber transmission.
- High spectral efficiency wireless systems.
- Evaluation of communication networks performance.
- Algorithm architecture for network devices.

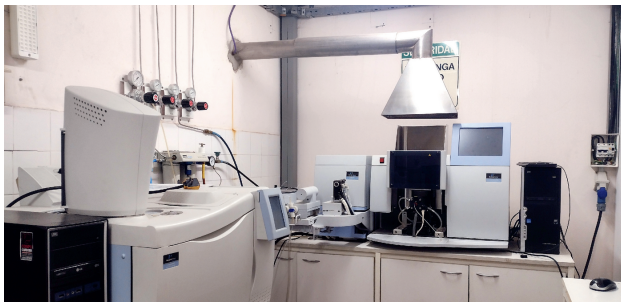
SOFTWARE AND AI LABORATORY (LIDESIA)

- Mathematics for AI.
- Technical infrastructure and data engineering.
- New trends and software resources for AI.
- Ethical and regulatory aspects of AI.

R&D Activities and Technical assistance

CHEMICAL AND FOOD TECHNOLOGY

- Thermodynamics and fluid behavior in oil and gas.
- Technology of polymers.
- Technology of pressurized and supercritical fluids.
- Valorization of cellulosic wastes.
- Chemical reactors engineering.
- Improvement of nutritional profiles.
- Physicochemical and sensorial analysis.
- Biopesticides.



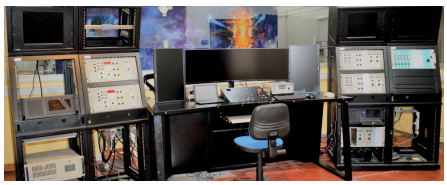
R&D Activities and Technical assistance

NUCLEAR ACTIVITIES

- Onsite and remote training of operators.
- Safety issues in nuclear facilities.
- Radioisotopes and nuclear medicine.
- Irradiation of materials.

OTHER TECHNOLOGIES

- Rehabilitation and assistive technologies.
- High and low voltage electrical assays and evaluation.
- Industrial planning, optimization and maintenance.



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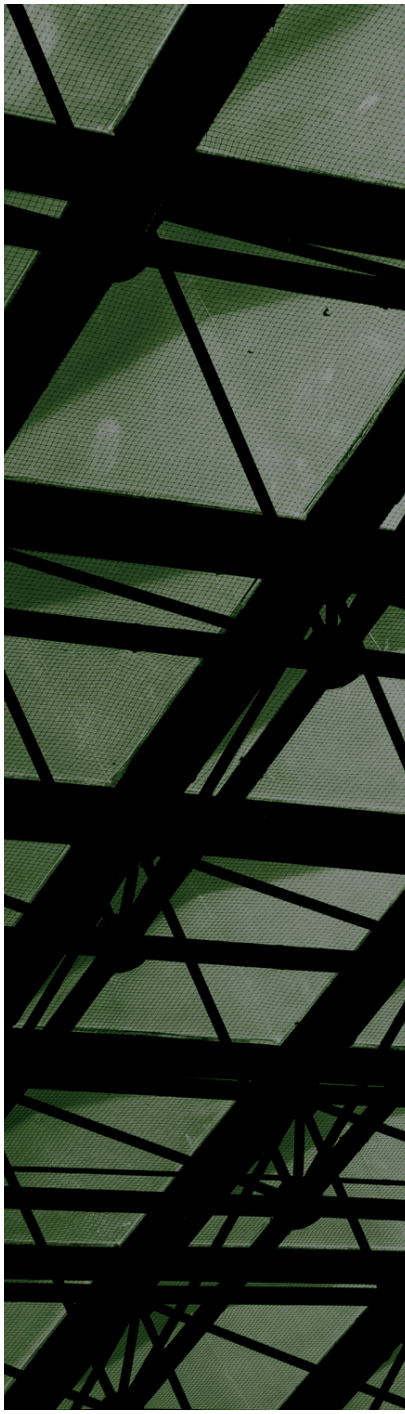

Websites

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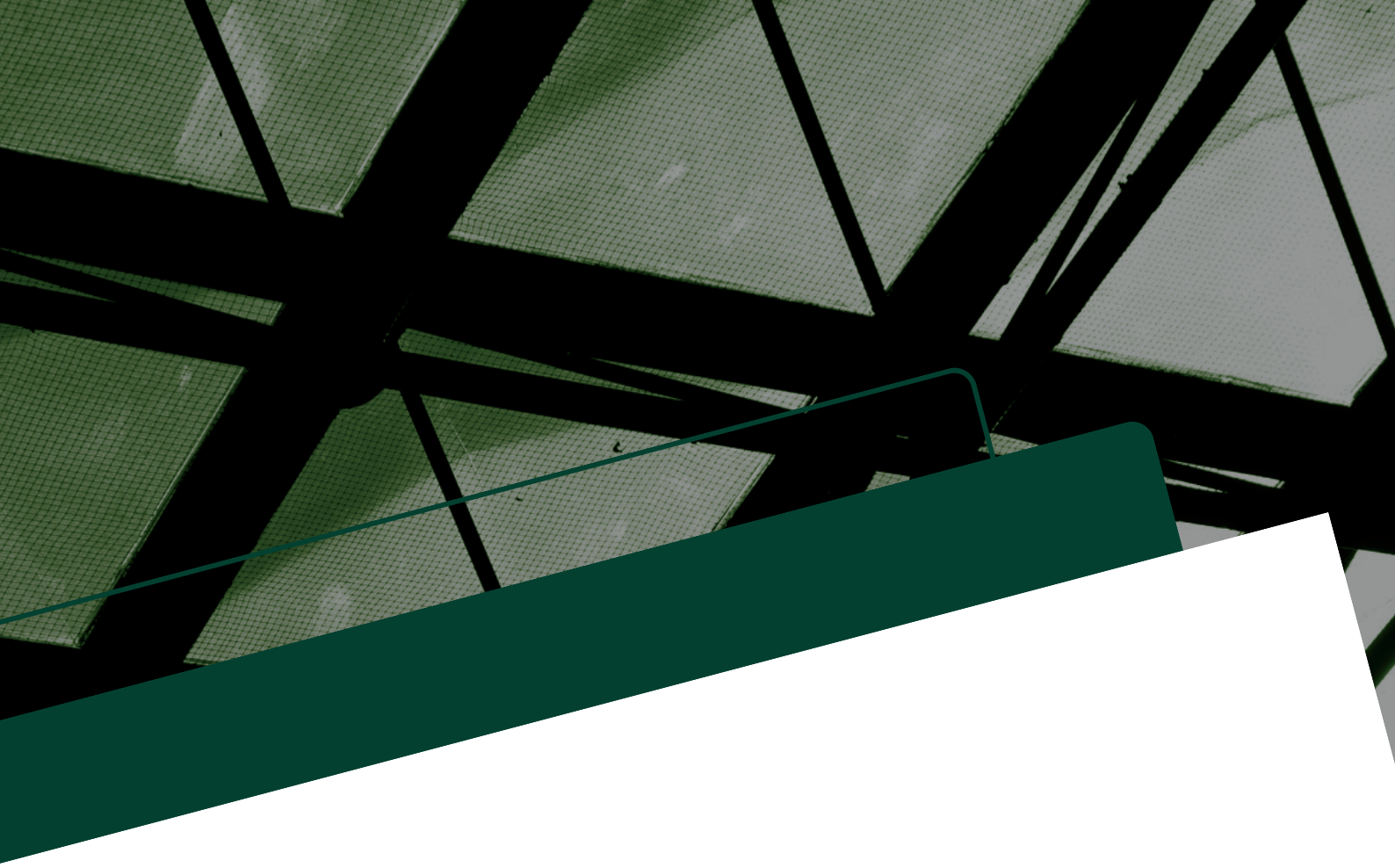

We look forward to building new opportunities together.

SCAN ME

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