

# ITBA - INSTITUTO TECNOLÓGICO DE BUENOS AIRES



## INTRODUCTION

One of the first private universities in Argentina, with more than half a century excelling in the field of higher education.

The Instituto Tecnológico de Buenos Aires (ITBA) is the only private University in Argentina to specialize in Engineering, Technology & Management.

We nurture and challenge students to thrive within the values of innovation, creativity, entrepreneurship & leadership.

## GROUNDWORK

- Rigorous academic standards.
- Thorough selection process. National lowest rate between admitted vs. applicants.
- Integral formation based on key social values.





## GROUNDWORK

- Emphasis on basic science and technology.
- Fully accredited programs, at the highest levels, by national | governmental accreditation offices.
- Unique education model in Argentina: hands-on, project oriented, early connection with business & research.

## ITBA IN NUMBERS

### ALUMNI

6062 undergraduate

1025 graduate

### FACULTY

85 full-time

429 part-time

### STUDENTS

100 international  
students

2113 undergraduate

246 postgraduate

766 executive  
programs

35 PhD

54% admission  
rate

65% retention  
rate

15 % students with financial aid

20% Students in graduating class w/  
international experience

Graduates: 10% of  
total Engineers in  
Argentina

## URBAN CAMPUS

### 1.- MADERO HISTORICAL CAMPUS

Rectorate, central offices and undergraduate programs.  
Research Labs

### 2. SOFTWARE SITE

Software Engineering Department, courses and Labs.

### 3. GRADUATE SCHOOL

Graduate school

### 4. CIDIM

Research and Development Center for Mechanical Engineering

### 5. Parque Patricios

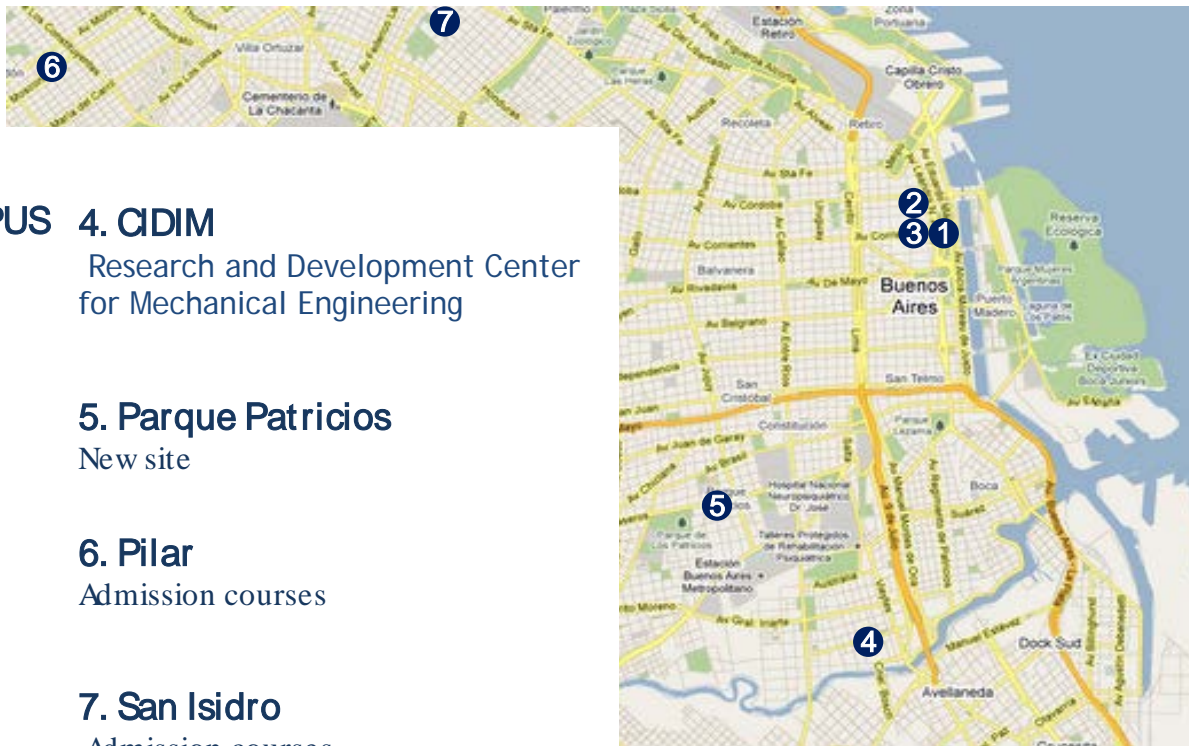
New site

### 6. Pilar

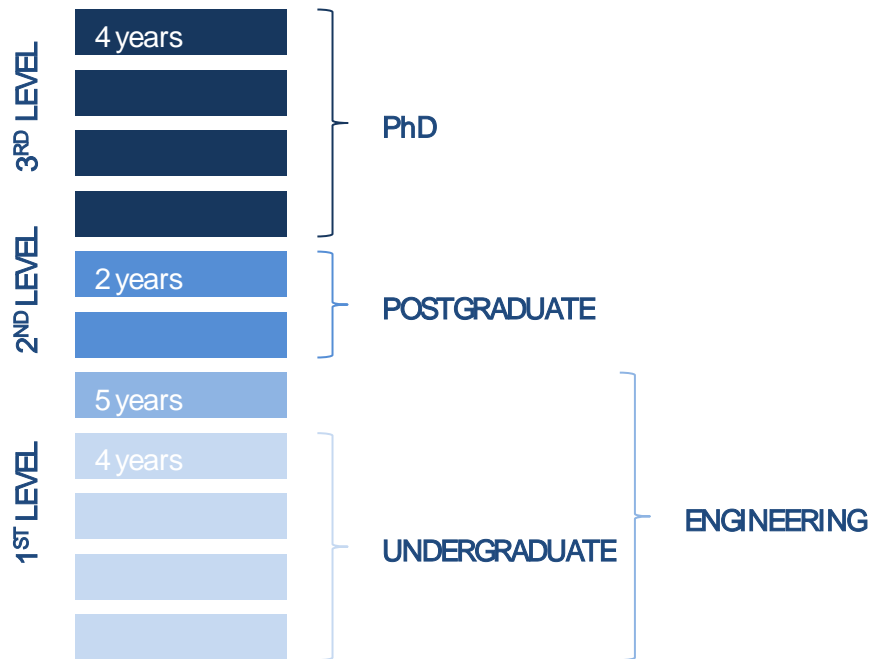
Admission courses

### 7. San Isidro

Admission courses



## ARGENTINE EDUCATION SYSTEM



## UNDERGRADUATE DEGREES

### Engineering and Management School

**Administration and Information Systems** (4 years)  
Orientation in International Trade and Information Systems

**Industrial Engineering** (5 years)  
Orientation in Materials

**Software Engineering** (5 years)  
Orientation in Computational Intelligence  
(robotics), Image Science  
(image & videogames) and Information Systems

### Engineering and Technology School

**Bioengineering** (5 years)

**Electric Engineering** (5 years)

**Electronic Engineering** (5 years)  
Orientations in Mechatronics (control),  
Bioelectronics, Signal processing and Telecommunications

**Mechanical Engineering** (5 years)  
Orientation in Materials, Automotive  
and Mechatronics

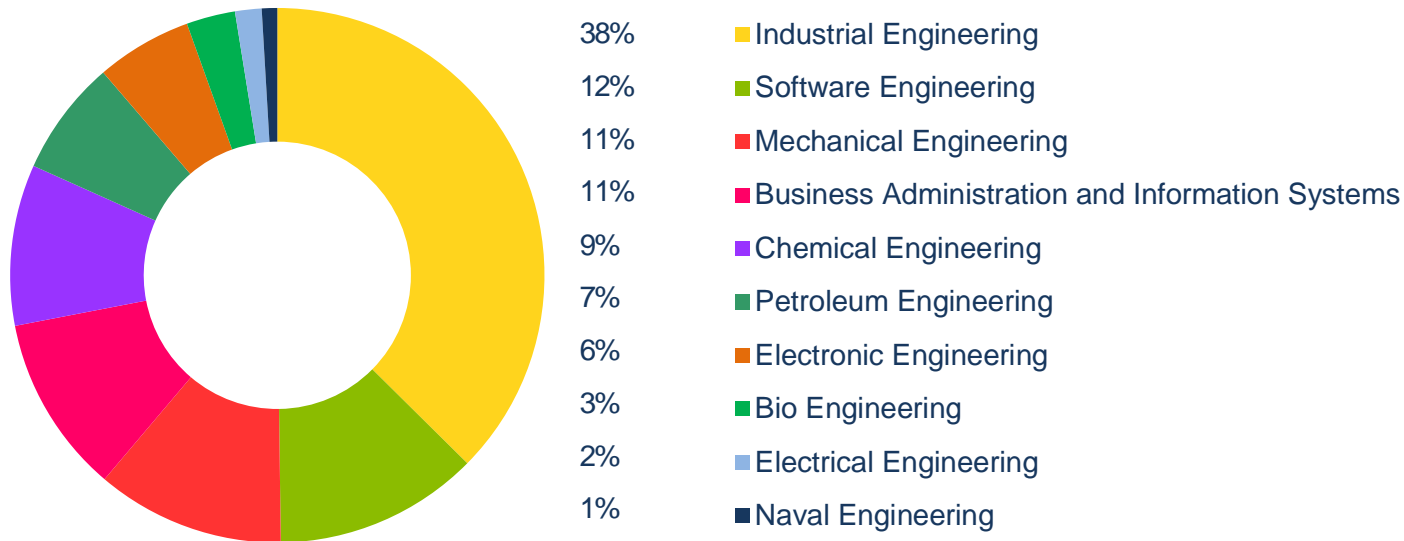
**Naval Engineering** (5 years)

**Petroleum Engineering** (5 years)

**Chemical Engineering** (5 years)



## STUDENT DISTRIBUTION



## GRADUATE SCHOOL

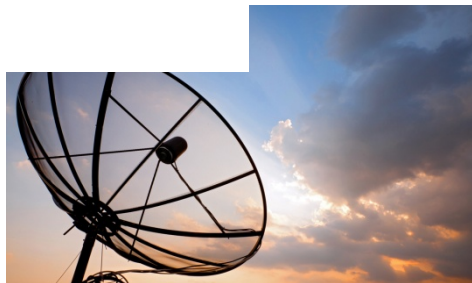
The Graduate School **mission** is to train and develop leaders in **concrete applications of technological innovations**, generating research and new knowledge, both theoretical and practical.

The Graduate School is a relevant reference of Argentine's technological innovation, transforming technological innovation in business innovation.

It develops **high impact applied research** and offers courses to respond to the market current needs.

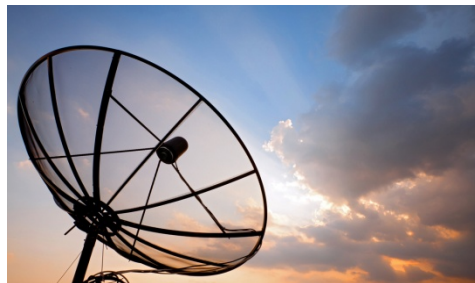
Its areas include:

- PRODUCTIVE DEVELOPMENT AND INNOVATION
- COMPETITIVITY
- TECHNOLOGICAL INNOVATION
- INFRASTRUCTURE
- SUSTAINABILITY
- SYSTEMIC INNOVATION
- LEADERSHIP



## MAESTRÍAS Y ESPECIALIZACIONES

- Maestría en Dirección Estratégica y Tecnológica (ITBA-EOI)
- Maestría en Evaluación de Proyectos (ITBA – UCEMA)
- Maestría en Energía y Ambiente (ITBA-KIT)
- Especialización en Gestión de Logística Integrada
- Especialización en Economía del Petróleo y del Gas Natural
- Especialización en Producción de Petróleo y Gas
- Especialización en Administración del Mercado Eléctrico
- Maestría en Gestión Ambiental



## EXECUTIVE PROGRAMMS

---

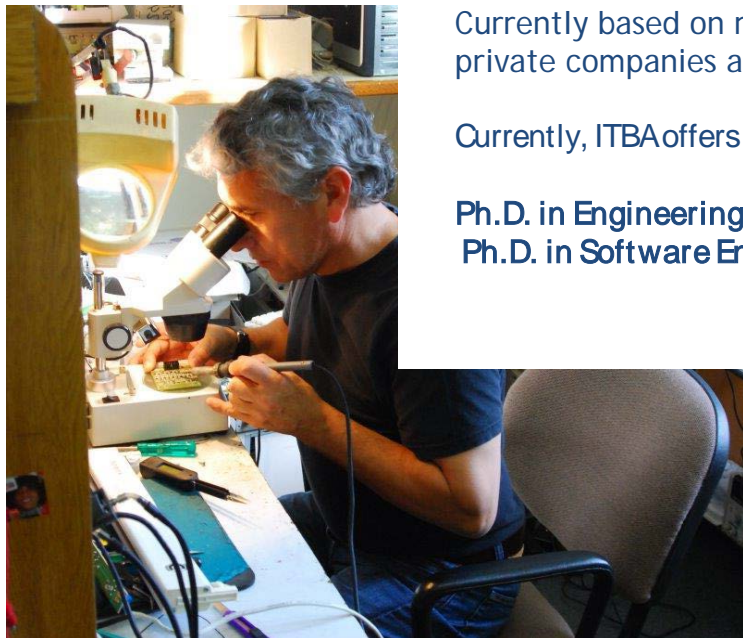
Open courses and tailor-made in the following areas:

- Economics and Finance
- Management and Leadership
- Logistics and Manufacturing
- Quality
- Marketing
- Human Resources
- Technology, society, law and environment
- Information Technology
- Petroleum, Gas and Energy



## PhDs

---



Currently based on research projects financed by government, private companies and ITBA funds.

Currently, ITBA offers two Doctorate programs:

**Ph.D. in Engineering**

**Ph.D. in Software Engineering**

## THE UNIVERSITY

---

Global integration, solid connections with private companies and public agencies, entrepreneurial expertise and hard core R & D are key to our history of academic excellence.



## GLOBAL UNIVERSITY

---

- Over 100 international students coming from 4 continents/ 23 countries.
- 90 ITBA students studying abroad per year.
- + 51 active exchange agreements with world class universities.
- Active international connections: 3 international networks.

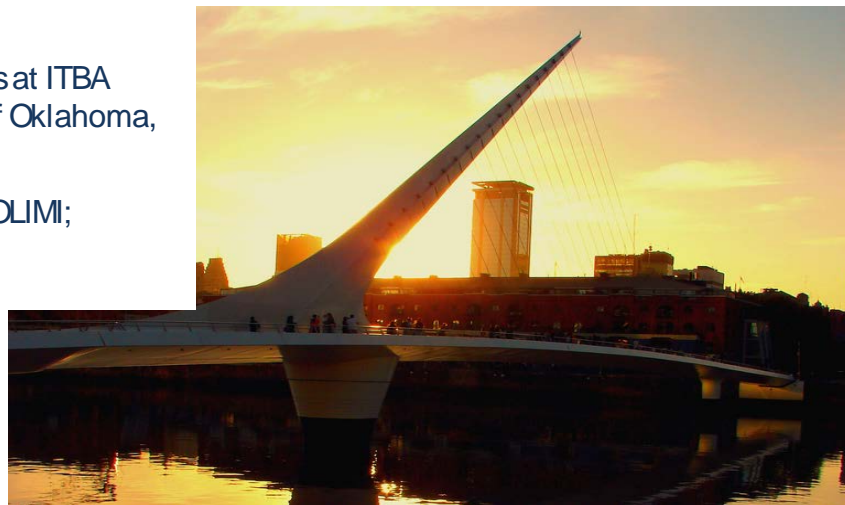




## INTERNATIONALIZATION AT HOME

---

- Courses in English.
- Visiting professors | Academic exchange, (Professors at ITBA from: MIT, Carnegie Mellon, Texas A&M, University of Oklahoma, Purdue University, ESCP France, KIT, ).
- 3 Double Degree Programs with Italy and France (POLIMI; POLITO; INSA Toulouse)
- Joint Degree Programs (IFP School, France; KIT, Germany)





## BILATERAL AGREEMENTS WITH OTHER UNIVERSITIES

### **Germany**

Karlsruhe Institute of Technology  
RWTH Aachen  
Technische Universität München  
Universität Stuttgart

### **Australia**

Carnegie Mellon University

### **Austria**

FH Technikum Wien

### **Belgium**

Université Catholique de Louvain

### **Brazil**

Universidade Estadual de Campinas  
Universidade Federal de Minas Gerais  
Universidade Federal de Rio de Janeiro

### **Chile**

Pontificia Universidad Católica de Chile  
Universidad Técnica Federico Santa María

### **China**

Beijing Institute of Technology

### **Colombia**

Pontificia Universidad Javeriana

### **Korea**

Korea Advanced Institute of Science and Technology

### **Spain**

Universidad de Alcalá  
Universidad de Málaga  
Universidad de Santiago de Compostela  
Universidad Politécnica de Madrid  
Universidad Politécnica de Valencia  
Universitat Politècnica de Catalunya  
Universidad Rey Juan Carlos

### **United States**

Georgia Institute of Technology  
University of Pennsylvania  
University of Wisconsin – Madison  
Rice University

### **Finland**

Tampere University of Technology  
Aalto University

### **France**

École Nationale Supérieure des Arts et Métiers, ParisTech  
École Polytechnique, ParisTech  
ESCP Europe  
Groupe Institut National des Sciences Appliquées  
Institut National Polytechnique de Grenoble

### **Netherlands**

Technische Universiteit Eindhoven

### **Norway**

NTNU

### **Ireland**

Waterford Institute of Technology

### **Italy**

Politecnico di Milano  
Politecnico di Torino

### **México**

Instituto Tecnológico y de Estudios Superiores de Monterrey  
Instituto Politécnico Nacional

### **Portugal**

Instituto Superior Técnico de Lisboa

### **Czech Republic**

University of New York in Prague

### **Sweden**

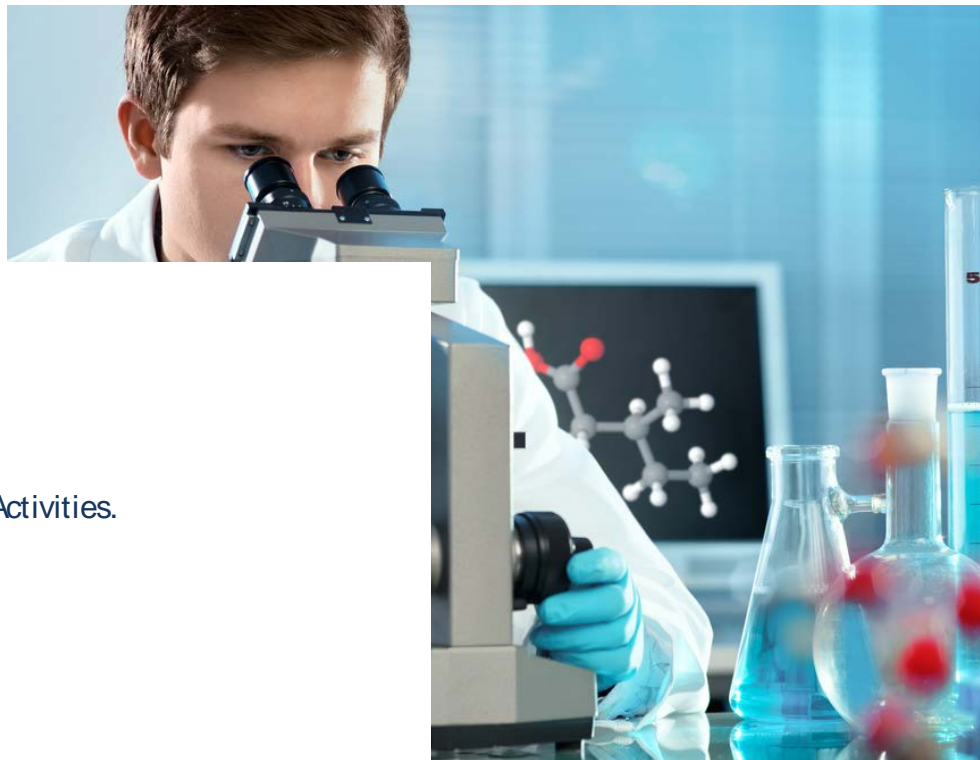
Chalmers Tekniska Högskola  
Lund University  
Royal Institute of Technology



## RESEARCH AND DEVELOPMENT

---

- Increased funding in research.
- Key role in undergraduate studies.
- Categorization of Researchers.
- Ongoing Research and Development Projects and Activities.



## R & D STRATEGIC AREAS

---

AGRIBUSINESS

CLEAN AND  
RENEWABLE  
ENERGIES

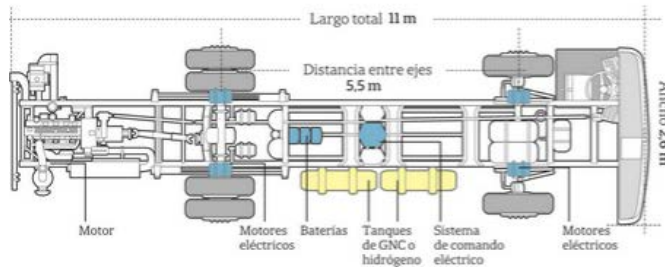
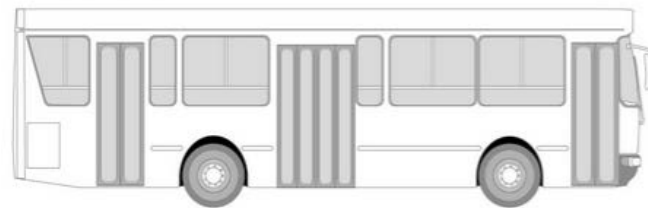
INFORMATION AND  
COMMUNICATIONS  
TECHNOLOGIES

HEALTH  
TECHNOLOGIES

## R & D PROJECTS

### HYBRID BUS

Hydrogen based transportation, without fuel cells. It reduces gas fluids and noise, plus lowering the units production costs.



**Caja de cambios:**  
Automática

**Dirección:**  
hidráulica

**Velocidad máxima:**  
122 km/k

**Capacidad máxima:**  
16.500 kg

**Sistema de frenado:**  
recuperará la energía de frenado, transformándola en energía eléctrica para cargar las baterías

#### DETALLES TÉCNICOS



##### MOTOR

El motor actualmente es de propulsión diésel con motor de combustión interna con comando electrónico. Tecnología Euro III.

##### Conversión

**Primera etapa:** propulsado a GNC → **Segunda etapa:** será alimentado por hidrógeno



##### EJES

Serán transformados para acoplarse los motores de propulsión eléctrica tanto en el eje trasero como en el eje delantero.



##### BATERIAS

El motor principal accionará un generador para cargar las baterías eléctricas, que son las que darán energía a los motores eléctricos como en los buses híbridos tradicionales.

#### OBJETIVO

Que el motor trabaje en la zona de máximo torque, en el rango aproximado entre 40 y 60 % de su número de revoluciones máximo, con mínimo nivel de consumo de combustible, para lograr un mayor rendimiento. De esta manera, el bus emitirá bajos niveles de ruido en operación urbana.

## R & D PROJECTS

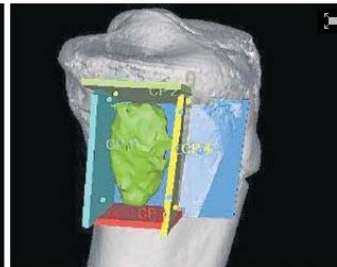
### PRE OPERATION SYSTEM TO TREAT BONE CANCER

The use of virtual reality to treat bones with cancer. It replaces current surgery guides for a tridimensional and interactive one.

El nuevo sistema permite planificar en tres dimensiones



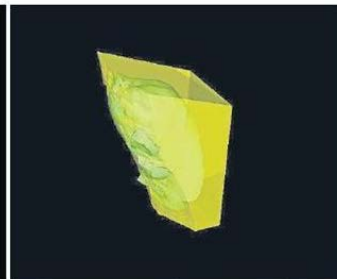
Ubican y toman las medidas del tumor



En 3D, determinan los márgenes de seguridad



Pueden aislar el área a tratar para observarla en detalle y con mucha precisión



También, pueden girar el tumor para verlo desde todos los ángulos y tomar decisiones quirúrgicas

## R & D PROJECTS

### ARSENIC MAP WATER CONSUMPTION IN ARGENTINA

Develops a map with data of water arsenic contamination, testing water from public or private sites (schools, hospitals, homes, etc.)  
Technical assistance in case of arsenic discovery.





## LABORATORIES AND CENTERS OF EXCELLENCE

### Energy and the environment

- Hydrogen Laboratory
- Center for Environmental Engineering
- Electron Microscopy and X-Ray Diffraction Laboratory

### Mechanical Engineering

- Automotive Engineering Laboratory
- Computational Mechanics Laboratory
- Hydrogen Laboratory
- Micro and Nanofluids Laboratory



## OTHER LABORATORIES AND CENTERS OF EXCELLENCE

### ELECTRONIC AND COMMUNICATIONS

- Applied Digital Electronics Group
- Argentine Radio Propagation & Electromagnetic Compatibility Research Center
- Center for Advanced Telecommunications
- Industrial Electronics Group
- Optoelectronics Laboratory
- Systems and Control Center

### IT

- Center for Business Processes Modeling and Software Applications

### MULTIDISCIPLINARY

- Materials Engineering Center
- Mechatronics Laboratory

### MANAGEMENT

- Center for Integral Logistics and Organization
- Center for Research & Innovation in Industrial Engineering
- Center for Simulation & Optimization Studies
- Center for Strategic Studies for Sustainable Development
- Leadership Development Center
- Systems Dynamics Research Center



## ENTREPRENEURSHIP CENTER



Created ten years ago to satisfy increasing demand and interest in Entrepreneurship, the creation of business, investments and resources to innovate and develop.

Main activities include:

- Entrepreneurship courses.
- Business Plans competitions.
- Business Incubation.
- Development and technical assistance for State funding.
- International cooperation projects.
- Project assessments.



**MÁXIMO CAVAZZANI**

Etermax CEO and creator of Preguntados



**DIEGO HERNAYES**

Co-founder Neopackaging, Co-founder Proyecto Programar, Founder Abfarma. Cofundador and current CEO - Monits.



**GABRIEL BAÑOS**

CEO & Founder Flowics

## UNIVERSITY EXTRA ACTIVITIES

---

ITBA develops extra-curricular activities to increase the relationship between the University and its Community.

It include sports, culture, general knowledge and community volunteering activities.

## STUDENT INITIATIVES

---



South American Business Forum (SABF) is the biggest international conference in Latinamerica', organized by ITBA students.

Since 2004, every year 100 students/leaders from all over the world debate on different topics of world relevance.

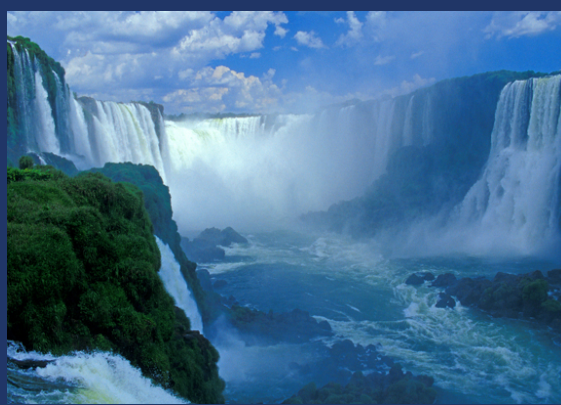


Trama is a student organization with two main goals:

- Build a bridge between the work environment and the university.
- Generate interest in students on current affairs.

It includes three clubs:

- Finance
- Consulting
- Entrepreneurship.



THANK YOU

