

Faculty of Engineering

Specialization courses

Specialization in Technological Applications of Nuclear Energy
Specialization in Industrial Social Sciences
Specialization in Environmental Diagnosis and Evaluation
Specialization in Data Mining and Knowledge Discovery.
Specialization in Oilfield Exploitation – Reservoir Engineering
Specialization in Gas
Specialization in Industrial Hygiene and Safety
Specialization in Industrial Automation Engineering
Specialization in Systems Engineering
Specialization in Telecommunications Engineering
Specialization in Harbor Engineering
Specialization in Sanitary and Environmental Engineering
Specialization in Oil
Specialization in Telecommunications Services and Networks
Specialization in the Steel Industry
Specialization in Telecommunication Technologies
Specialization in Geodesic-Geophysical Engineering

Master degrees

MA in Biotechnology
MA in Industrial Social Sciences
MA in Data Mining and Knowledge Discovery.
MA in Industrial Direction Engineering
MA in Transport Engineering – Road Orientation
MA in Oil and Natural Gas Engineering
MA in Telecommunications Engineering
MA in Sanitary and Environmental Sciences Engineering
MA in Optoelectronics
MA in Processes of Regional Integration - MERCOSUR
MA in Environmental Protection
MA in Public Health
MA in the Steel Industry
MA in Numeric Simulation and Control

Doctorate

Doctorate of the University of Buenos Aires

Specialization in Environmental Diagnosis and Evaluation

General information

Director: Héctor Ricardo Rebagliatti and Eduardo M. Florio
Degree: Specialist in Environmental Diagnosis and Evaluation
Approximate duration: 2 years
Enrolment periods: to be determined
Department: Faculty of Engineering, Department of Industrial Engineering.

Contact information

Address: 2214 Las Heras St. 1st floor (C1127AAR)

Telephone: 4514-3017
e-mail: indust@fi.uba.ar

Course description

Objectives

To provide high level academic training for graduates to be able to work efficiently as researchers, teachers or coordinators and integrate multidisciplinary teams concerned with solving environmental problems in the public and private sectors of specialized consultancy.

Syllabus

First year: Introduction to ecology. Processes of deterioration of natural resources. Social and economic aspects. Environmental legislation. Water pollution. Air pollution. Soil pollution. Urban planning. Biotransformation and toxicology. Industrial hygiene and safety. Factory waste. Hazardous waste.
Second year: Toxicological epidemiology. Pathologic waste. Radioactive waste. Home waste. Treatment of liquid effluents. Treatment of gas effluents. Soil drainage. Environmental auditing. Methods of prevention. International industry and commerce.

Specialization in Gas

General information

Director: Gustavo Cavallo
Degree: Specialist in Gas
Approximate duration: 1 year
Enrolment periods: February and March
Department: Faculty of Engineering, Institute of Oil and Gas.

Contact information

Address: 2214 Las Heras St. 1st floor (C1127AAR)
Telephone: 4514-3013
e-mail: igpuba@fi.uba.ar

Course description

Objectives

To train professional from different disciplines in the specialty of gas so that they will be able to approach global and specific issues of the industry.

Syllabus

First term: Oilfield geology and engineering. Gas thermodynamics. Transport of natural gas. Introduction to energy economics. Oil and natural gas economics. Evaluation of gas projects. Elements of company management.
Second term: Distribution and commercialization of natural gas. Treatment of natural gas. Auxiliary systems, safety and rational use of natural gas. Liquefied oil gas and liquefied natural gas. Legislation of hydrocarbons and environment. Engineering of oil derivatives and natural gas. Professional ethics.

Specialization in Oilfield Exploitation – Reservoir Engineering

General information

Director: Juan B. Bravo
Degree: Specialist in Oilfield Exploitation – Reservoir Engineering
Approximate duration: 1 year
Enrolment periods: February and March
Department: Faculty of Engineering, Institute of oil and gas

Contact information

Address: 2214 Las Heras St. 3rd floor (C1127AAR)
Telephone: 4514-3013
e-mail: igpuba@fi.uba.ar

Course description

Objectives

To train professionals in the study and development of methods tending to an optimum recovery, from the technical and economic point of views, of the fluids contained in reservoirs; as well as in the calculation of oil and gas reserves.

Syllabus

Geology applied to oil and gas. Hydrocarbons economy and legislation. Engineering of reservoirs. Notions of drilling, termination of wells and extraction. Reservoir fluids. Applied sedimentology. Data processing in reservoirs. Evaluation of projects. Engineering of reservoirs.

Specialization in Industrial Hygiene and Safety

General information

Director: Américo Carlos Larghi
Degree: Specialist in Industrial Hygiene and Safety
Approximate duration: Intensive: 1 year, Regular: 2 years
Enrolment periods: From December 1st to March 1st
Department: Faculty of Engineering, Department of Environmental and Industrial Engineering.

Contact information

Address: 850 Paseo Colón St. 4th floor (C1063ACV)
Telephone: 4342-9184 Ext.:160/1/2
e-mail: diat@fi.uba.ar

Course description

Objectives

To train engineers so that they can carry out activities concerning hygiene and safety in working environments abiding by the law.

Syllabus

First year: Environmental and industrial physiology. Toxicology. Pollution of the working environment. Theory of accident preservation; education for safety; statistical notions. Prevention of fires and explosions. Electrical hazards.
Second year: Mechanic risks and safety in construction sites. Illumination. Effluent and waste treatment. Sanitary radiophysics. Noises and vibrations. Ventilation. Organization and legislation.

Specialization in Industrial Automation Engineering

General information

Director: Gabriel Venturino
Degree: Specialist in Industrial Automation Engineering
Approximate duration: 3 running terms
Enrolment periods: consult at Postgraduates' Department
Department: Faculty of Engineering – School of Graduates in Electronic Engineering and Telecommunications

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 011 4331-5077
email: ecomunic@fi.uba.ar

Course description

Objectives

To form specialists in the area of automation and strengthen the bonds between the different areas and departments of the Faculty that develop activities concerning automation, both in research and teaching.

Graduates will be qualified to innovate and design automation systems, select and specify equipment, hire services, run projects, implement solutions and organize maintenance processes.

They will have the necessary skills to:

Identify and apply the main tools and methods of the theory about automatic control of industrial processes. Select, program, and specify programmable controllers. Analyze, design and optimize electrical, pneumatic and hydraulic systems. Know and apply systems of electrical, pneumatic and hydraulic power supply to automatisms. Select, parameterize and specify sensors. Identify and solve problems in automatisms stemming from mechanic, electrical and electronic failures. Select, specify and install industrial networks for communication. Select and specify software of industrial supervision. Select robots for industrial applications. Identify and design architectures for systems of flexible manufacture. Develop plans and regulations for quality and safety concerning industrial automation.

Syllabus

Automation, instrumentation, and control. Basic concepts of automatic control. Electricity and electric installations. Industrial electronics. Power electronics. Programmable controllers. Sensors and transmitters. Pneumatic and hydraulic automation. Control valves. Mechanic systems. Industrial communications. Industrial computer studies. Artificial vision. Robotics and flexible manufacture. Building automation. Seminars: technological trends.

Specialization in Systems Engineering

General information

Director: Carlos Gustavo Lopez
Degree: Specialist in Systems Engineering
Approximate duration: 2 years
Enrolment periods: consult
Department: Faculty of Engineering

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 011 4331-1852
email: posgrado @fi.uba.ar

Course description

Objectives

To provide professionals with complementary training so as to integrate software engineering to their own disciplines and achieve a balanced training of activities in software engineering, its stages and products.

Syllabus

Introductory subjects: Fundamental concepts of computer studies. Discrete mathematics. Operational research I. Computer studies environment. Complements of production organization. Subjects of software engineering and administration: Functional analysis and specifications of projects. Project administration. Computer-assisted business administration. Design control and specification of human interphases. Project control. Operational research II. Quality processes. Computer studies subjects: operative systems and developmental environments. Artificial intelligence and expert systems. Databases. Networks. Modern techniques. Research work. Professional work.

Specialization in Telecommunications Engineering

General information

Director: Gabriel Venturno
Degree: Specialist in Telecommunications Engineering
Approximate duration: 2 years
Enrolment periods: December 1st to March 1st (every two years)
Department: Faculty of Engineering

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 4342-9184/9231 Ext.: 135/ 6 4331-5077
e-mail: ecomunic@fi.uba.ar

Course description

Objectives

To prepare professionals specialized in Telecommunications Engineering providing them the knowledge that the continuous technological advance demands so as to work in different areas of this branch of engineering such as: design, study, planning, exploitation, and maintenance; management and optimization of machinery and human resources.

Syllabus

First year: Module I: Theory of Telecommunications. External plant. Computer studies and software. Hierarchy of digital multiplexation. Data networks. Software applications.
Second year: Module II: Systems of digital commutation. Traffic engineering. Digital network of integrated systems. Cable TV. Linking systems by radiofrequency. Planning. Seminars.

Specialization in Harbor Engineering

General information

Director: Raúl S. Escalante

Degree: Specialist in Harbour Engineering

Approximate duration: 1 year

Enrolment periods: consult at Graduates' School

Department: Faculty of Engineering, School of Graduates in Harbor Engineering, Department of Transport

Contact Information

Address: 2214 Las Heras St. 2nd floor (C1127AAR)

Telephone: 4514-3021

e-mail: transpor@fi.uba.ar

Course description

Objectives

To provide solid academic and professional training in engineering and management of harbors and navigable ways.

To form specialized human resources, so that they will be able to work as efficient agents and revitalizers of the chain of fluvial and maritime transports in order to contribute to increasing the shipping flow.

To boost the research in the areas of fluvial and maritime transport.

Syllabus

Area of basic studies: Maritime and estuary hydraulics. Hydraulics and fluvial engineering. Notions of hydrographics. Analysis of the environmental impact of infrastructure jobs.

Area of harbor engineering: Harbor planning and logistics. Harbor works. Sheltering and margin works. Building techniques and procedures.

Area of navigable ways: Design of navigable ways. Theory and practice of fluvial sailing. Dredging engineering. Implementation of helping systems to navigation.

Specialization in Sanitary and Environmental Engineering

General information

Director: Augusto Pescuma

Degree: Specialist in Sanitary and Environmental Engineering

Approximate duration: 2 years

Enrolment periods: March

Department: Faculty of Engineering, Institute of Sanitary Engineering

Contact information

Address: 850 Paseo Colón St. 4th floor (C1063ACV)

Telephone: 4342-9184/9231 Ext.: 170/171/172. Fax: 4331-5362

e-mail: ingsanitam@fi.uba.ar

Course description

Objectives

To form specialists in Sanitary and Environmental Engineering training engineering in the planning, design and direction of projects of systems and institutions that, with the aim of improving the quality of life, try to meet the requirements of environmental cleaning up posed by the problematic of water, air and soil pollution.

Syllabus

Environmental cleaning up and ecology. Unitary operations and processes. Hydrology. Sanitary hydraulics. Sanitary chemistry and microbiology. Water supply. Urban drainage. Electromechanic equipment. Statistics and computer studies. Industrial hygiene. Atmospheric pollution. Solid waste. Epidemiology. Planning and management. Sanitary hydraulic structure. Sanitary hydraulic operations. Anaerobic treatments. Methodology for preparing the final paper.

Specialization in Oil

General information

Director: Gualter Ademar Chebli
Degree: Specialist in Oil
Approximate duration: 3 terms
Enrolment periods: February and March
Department: Faculty of Engineering, Institute of Oil and Gas

Contact information

Address: 2214 Las Heras Av. 3rd floor (C1127AAR)
Telephone: 4514-3013
e-mail: igpuba@fi.uba.ar

Course description

Objectives

To provide training in the specialty of Oil to professionals of engineering of different disciplines so that they will acquire a global and specific handling of the knowledge required for the development of different activities connected to the oil industry.

Syllabus

First term: General geology of oil and natural gas. Geochemistry of oil and natural gas. Geophysics of oil. Geophysics of development. Reservoir analysis. Engineering of oil wells drilling. Engineering of oil production. Introduction to energy economics.
Second term: Oil thermodynamics. Unitary operations and oil processes. Technology of refinery equipment. Petrochemistry. Oil and natural gas economics. Evaluation of oil projects. Transport of crude oil and derivates. Elements of company management.
Third term: Internal commercialization of crude oil and derivates. International commerce of hydrocarbons. Market analysis. Petrochemistry II. Engineering of oil and natural gas products. General planning. Legislation of hydrocarbons and environment. Oil contracts. Professional ethics.

Specialization in Telecommunications Services and Networks

General information

Director: Gabriel Venturino
Degree: Specialist in Telecommunications Services and Networks
Approximate duration: 1 year
Enrolment periods: December 15th to March 15th

Department: Faculty of Engineering – School of Graduates in Electronic and Telecommunications Engineering.

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 011 4331-5077/8851
email: ecomunic@fi.uba.ar

Course description

Objectives

To form specialists in the area of Telecommunications Services and Networks with an integrative vision of technology, processes and regulations so that they will be able to work in the development and operation of networks and services.

Graduates will be qualified to innovate and design telecommunications networks; select and specify equipment; develop and hire new services; and maintain and operate networks.

Syllabus

Area: Telecommunications services. Telecommunications services and networks. Information society. Seminars on new trends in telecommunications.

Area: Planning of services and networks. Planning of networks. Planning of services. Engineering of clients' architecture.

Area: telecommunications management. Market analysis and strategic direction. Network management, operation and safety. Telecommunications regulations. Planning and evaluation of projects.

Area: Integrative work. Final integrative project.

Specialization in the Steel Industry

General information

Director: to be appointed

Degree: Specialist in the Steel Industry

Approximate duration: 2 years

Enrolment periods: consult

Department: Faculty of Engineering, Department of Research and Doctorate

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 4331-1852
email: secid@fi.uba.ar

Course description

Objectives

To expand on the knowledge of basic science concerned with the interpretation and analysis of processes and products.

To complete the knowledge of applied science, analyze the processes, characteristics and specifications of products.

Syllabus

First stage: Introduction to Mathematics and computational mechanics. Fluid-dynamics and energy and matter transference. Thermodynamics.

Second stage: Thermodynamics of multicomponent systems. Reactions in metallurgy. Physical metallurgy. Steelwork reactions. Raw material and reduction (option A and B). Steelworks (option A and B). Lamination (option A and B) and termination processes. Products (option A and B)

Specialization in Telecommunication Technologies

General information

Director: Gabriel Venturino

Degree: Specialist in Telecommunication Technologies

Approximate duration: 1 ½ years

Enrolment periods: December 15th to March 15th

Department: Faculty of Engineering – School of Graduates in Electronic and Telecommunications Engineering

Contact information

Address: 850 Paseo colon St. 3rd floor (C1063ACV)

Telephone: 011 4331-5077/8851

email: ecomunic@fi.uba.ar

Course description

Objectives

To train specialists in the area of Telecommunications Technology with solid groundings in new technologies so that they can work both in the development and in the operation of public and private networks.

Graduates will be qualified to innovate and design telecommunications networks and to select and specify equipment and services.

Syllabus

Area: Theory of telecommunications: Principles of digital communications. Signal processing. Access protocols. Digital multiplexation.

Area: Means of access: Means of access: Copper. Means of access: Optical fibers. Means of access: Radiolinks.

Area: Data networks: LAN and WAN networks. IP Networks. Optimization of network traffic. Distributed operative systems.

Area: Network technologies: Fixed networks. Wireless networks.

Area: laboratory: TCP/IP Networks laboratory. Telecommunications laboratory.

Area: Integrative paper: Integrative project.

Specialization in Geodesic-Geophysical Engineering

General information

Director: José Luis Mazzeo

Degree: Geodesic-Geophysical Engineer

Approximate duration: 2 ½ years

Enrolment periods: March

Department: Faculty of Engineering, School of Graduates in Geodesic - Geophysical Engineering and Hydrographic Engineering.

Contact information

Address: 850 Paseo colon St. 3rd floor (C1063ACV)
Telephone: 4514-3014
e-mail: geoduba@fi.uba.ar

Course description

Objectives

To complete an adequate training in sciences concerning the earth (geodesics-geophysics, geology and others) in order to form professionals highly involved in their physical behavior and their interaction with the geosystem, with knowledge of the procedures used for precise measuring and of the engineering works.

To make professionals be able to apply modern procedures to carry out geodesic and geophysical upliftings destined to the analysis of structure, shape and dimensions of the earth, its surface representation and evaluation of mineral, energetic and natural resources.

Syllabus

First year: Geodesics II. Geophysics. Special mathematics. Photogrammetry II. Applied Radiotechnics. Astronomic geodesics and compensation calculations.

Second year: Applied geology. Applied geophysics. Hydrography and oceanography. Agrarian hydraulics and cleaning up. Cartography and cartographic drawing. Notions of company economics.

MA in Industrial Direction Engineering

General information

Director: to be appointed

Degree: MA of the University of Buenos Aires in Industrial Direction Engineering.

Approximate duration: 2 years

Enrolment periods: consult at the Faculty

Department: Faculty of Engineering.

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 4331-4987
e-mail: egide@fi.uba.ar

Course description

Objectives

To provide university graduates –who are currently working in the running of companies- with specific training in industry organization and in services that promotes and facilitates their professional development for a more efficient running of human organizations.

To promote systematic reflection on the practices of industries and/or services direction and their application to case studies.

To solve problems and generate alternatives of solutions in contexts of organizational crisis and problematic situations.

To train skills for handling of uncertainties in managerial decision making and conflictive situations.

Syllabus

The MA is organized in four areas:

1- Industrial: Operation design and control. Logistics in distribution and supply. Engineering projects. Organizational behavior. Companies and environment. Quality management. Development of human resources. System of management control. Organization and strategic direction I. Organization and strategic direction II.

2- Training for the professional development: Economy for directors. Financial Engineering. Commercialization of industrial products and services. Negotiations and business risks. International commercialization.

3-Research

Seminars and workshops for Thesis elaboration: research methodology. Ethics and public responsibility. Conflicts and solutions: integrative cases. Quantitative methods for management. Thesis Planning.

MA in Transport Engineering – Road Orientation

General information

Director: Roberto Daniel Agosta / Co-Director: Juan Manuel Campana

Degree: MA of the University of Buenos Aires in Transport Engineering – Road Orientation

Approximate duration: 1 ½ years

Enrolment periods: consult at the Department of Transport

Department: Faculty of Engineering – Department of Transport

Contact information

Address: 2214 Las Heras Avenue 2nd floor (C1127AAR)

Telephone: 011 4514-2018

email: transpor@fi.uba.ar

Course description

Objectives

To form professional specialized in road engineering for planning, analyzing, designing, building, operating, maintaining and managing road infrastructure; and for carrying out research in such areas with the aim of improving quality, circulation conditions and road safety. All these will be developed in an interdisciplinary frame and with advanced concepts and instruments, with the objective of training professionals who will be able to adapt to the changing dynamics of the area and generating knowledge.

Syllabus

Cycle of basic training: Introduction to Engineering and Transport Economy. Quantitative methods. Projects economy and evaluation. Transport rights and regulations. Principles of organization. Environmental impact. Research workshop.

Specialization cycle: Road planning. Traffic. Hydrology and road hydraulics. Road materials I. Road materials II. Road materials III. Asphalt layers. Road equipments. Geometric design and road safety. Roadwork supervisions. Pavement design and evaluations. Techniques of conservation. Management systems. Seminars. MA Thesis.

MA in Oil and Natural Gas Engineering

General information

Director: Nicolás Verini

Degree: MA of the University of Buenos Aires.

Approximate duration: 2 years
Enrolment periods: February and March
Department: Faculty of Engineering, Institute of Oil and Gas.

Contact information

Address: 2214 Las Heras Avenue 3rd floor (C1127AAR)
Telephone and fax: 4514-3013
e-mail: igpuba@fi.uba.ar

Course description

Objectives

To provide training in the specialties of Oil and Natural Gas to engineers of different disciplines and scientific orientations so that they will acquire a global and specific handling of the knowledge required to work in different activities concerned with the oil and gas industry and to develop the research skills applied to such area.

Syllabus

Courses: 1) Research and technological development in the hydrocarbons area. 2) Energetic policies in the hydrocarbons area. 3) Current state and trends in oil and natural gas production and exploration. 4) Current state and trends in oil and natural gas refining and transport. 5) Current state and trends in oil and natural gas commercialization.

MA in Telecommunications Engineering

General information

Director: Gabriel Venturino
Degree: MA of the University of Buenos Aires in Telecommunications Engineering.
Approximate duration: 2 years
Enrolment periods: to be determined
Department: Faculty of Engineering

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)
Telephone: 4342-9184/9231 Ext.: 135/ 6 4331-5077
e-mail: ecomunic@fi.uba.ar

Course description

Objectives

To prepare professionals specialized in Telecommunications Engineering so as to expand the knowledge and the research skills.

Syllabus

First cycle: First year: Module I: Theory of Telecommunications. External plant. Computer studies and software. Hierarchy of digital multiplexation. Data networks. Software applications.
Second year: Module II: Systems of digital commutation. Traffic engineering. Digital network of integrated systems. Cable TV. Linking systems by radiofrequency. Planning. Seminars.
Second cycle: Seminars/Workshops on Thesis elaboration.

MA in Sanitary and Environmental Sciences Engineering

General information

Director: Augusto Pescuma

Degree: MA of the University of Buenos Aires in Sanitary and Environmental Sciences Engineering

Approximate duration: 3 years

Enrolment periods: March

Department: Faculty of Engineering, Institute of Sanitary Engineering

Contact Information

Address: 850 Paseo Colón 4th floor (C1063ACV)

Telephone: 4342-9184 Ext.: 170 Fax: 4331-5362

e-mail: ingsanitam@fi.uba.ar

Course description

Objectives

To train students in Sanitary and Environmental Sciences Engineering, perfecting Specialists in Sanitary and Environmental Engineering and developing the research skills in the search for excellence.

Syllabus

A seminar-workshop with a duration corresponding to three modules

The topic will be: Elaboration of research programs. Research methodologies. Areas of research in environmental cleaning up. Methodologies for the elaboration and presentation of the Thesis.

MA in Optoelectronics

General information

Director: to be appointed

Degree: MA of the University of Buenos Aires in Optoelectronics

Approximate duration: 2 years

Enrolment periods: consult

Department: Faculty of Engineering

Contact information

Address: 850 Paseo Colón St. 3rd floor (C1063ACV)

Telephone: 4342- 9231 Ext. 155/ 4331-1852

e-mail: secid@fi.uba.ar

Course description

Objectives

To provide postgraduate academic training for professionals graduated in National or International Universities, to contribute to the reduction of the national technological gap.

To form professionals who will be qualified to understand, evaluate and apply the technologies and techniques concerned with optoelectronics.

Syllabus

Compulsory subjects:

Engineering sciences: Mathematics complements. Advanced optics. Optical materials. Optoelectronic components. Radiation sources and atmospheric transmission. Detectors. Detection systems. Signal processing. Image recognition and identification. Lasers. Optical fibers and cables. Interdisciplinary approaches: Environmental control. Medical diagnosis and treatment. Defense and safety. Industrial and agrarian quality control. Preservation of historical buildings and of architectonic value. Forest fires prevention and fight. Computer studies and digital processing. Communications.

Laboratory and workshop: Optoelectronics laboratory. Communications laboratory. Laboratory of industrial applications. Image laboratory. Calibration laboratory.

Applications: Optional (they must sum up 240 hours). Optical communications. Thermographs. Non-destructive essays and maintenance. Remote sensing. Machine views. Metrology. Industrial applications of laser. Spectrometry and interferometers. Medical applications. Applications in defense and safety. Solar energy exploitation. Calibration of optoelectronic systems. Optical networks of communication. Satellite optoelectronic systems. Applications to astronomy.

MA in Environmental Protection

General information

Director: Eduardo M. Florio; Ricardo Héctor Rebagliati

Degree: MA of the University of Buenos Aires in Environmental Protection

Approximate duration: 3 years

Enrolment periods: to be determined

Department: Faculty of Engineering, Department of Industrial Engineering

Contact information

Address: 2214 Las Heras 1st floor (C1127AAR)

Telephone: 4514- 3017

e-mail: indust@fi.uba.ar

Course description

Objectives

To provide high level academic training so that graduates will be able to work efficiently as researchers, teachers or coordinators in multidisciplinary teams devoted to solving environmental problems, both in the private and public sectors.

Syllabus

Courses, seminars and conferences which must be approved by the Thesis Director.

MA Thesis

MA in the Steel Industry

General information

Director: Juan Carlos Gonzalez

Degree: MA of the University of Buenos Aires in the Steel Industry

Approximate duration: 2 consult

Enrolment periods: consult.

Contact information

Address: 850 Paso Colón St. 3rd floor (C1063ACV)
Telephone: 4331-1852
e-mail: secid@fi.uba.ar

Course description

Objectives

To provide high level academic training to engineers interested in the steel industry, so that they will acquire global and specific handling of the knowledge required to carry out efficiently the different activities concerned with the steel industry and develop their research skills.

Syllabus

First stage: Introduction to Mathematics and computational mechanics. Fluid-dynamics and energy and matter transference. Thermodynamics.

Second stage: Thermodynamics of multicomponent systems. Reactions in metallurgy. Physical metallurgy. Steelwork reactions. Raw material and reduction (option A and B). Steelworks (option A and B). Lamination (option A and B) and termination processes. Products (option A and B)

Third stage: (compulsory) Methodological introduction to scientific research. Design of technological experiments. Physical simulation of processes.

Optional (the choice may be expanded): Analysis techniques. Design methodology according to ISO 9001 regulations. Continuum mechanics applied to lamination. Refractory materials used in the steel industry. Modeling of processes in the steel industry.

MA in Numeric Simulation and Control

General information

Director: to be appointed

Degree: MA of the University of Buenos Aires in Numeric Simulation and Control

Approximate duration: 2 years

Enrolment periods: February-March

Department: Faculty of Engineering, Department of Research and Doctorate

Contact information

Address: 850 Paso Colón St. 3rd floor (C1063ACV)
Telephone: 4342- 9231 Ext. 155/ 4331-1852
e-mail: secid@fi.uba.ar

Course description

Objectives

To provide graduates with a methodological basis to face problems that he may come up with in his professional life.

To train professionals offering them knowledge concerning the state of this interdisciplinary thematic.

Syllabus

Area of Numeric Simulation: Functional Analysis. Advanced numeric analysis. Numeric aspects in the design of sturdy controls. Dynamics of computational fluids. Advanced finite elements. Fractal, waves and applications in processing of signals and images. Introduction to complex systems of computational physics. Introduction to tensorial analysis. Introduction to wavelets analysis. Introduction to the method of finite elements. Introduction to numeric modeling of reactive fluids in gaseous stages. Computational mechanics I. Computational mechanics II (A). (Orientation in solids) Computational mechanics II (B). (Orientation in fluids). Continuum mechanics. Modeling of industrial processes through computational techniques. Models and systems I. Models and systems II. Simulation of control systems. Numeric simulations in environmental hydraulics. Complex systems and parallel machines. Adaptable computational techniques. Numeric treatment of equations in derivatives through finite elements. Simulation of circuits of high level of integration. Differential equations in partial derivatives (application to bioenergy).

Area of Control: Advanced control of processes. Power control. Digital control. Control in the industry of chemical processes. Non-linear control I. Non-linear control II. Sturdy design of control systems. Deterministic identification of worst case scenario in systems. Adaptable identification and control. Introduction to the modern control of optimum control. Industrial applications. Introduction to the control of fuzzy processes. Introduction to modern control. LFT's; LMI's and LVP's in the control of non-linear systems. System of discontinuous control. Adaptable systems. Neuronal networks. Digital systems of processes control. Theory of control I. Theory of operators and applications. Topics of advanced linear control.

Numerical simulation and control: Theory of waves.

Doctorate

General information

Doctorates' Committee: Drs: Miguel Ángel CAVALIERE, Mauricio CHOCRÓN, Bibiana ARCONDO, Master Luis Alberto de VEDIA, Eng. Juan Carlos RERRERI.

Substitutes: Drs. Rodolfo H. MASCHERONI, Adrián César RAZZITTE, Fernando Enrique AUDEBERT, Gustavo CORACH, Eng. Sara Cecilia TRESSSENS.

Degree: Doctor of the University of Buenos Aires

Enrolment period: May and November

Objectives:

To carry out a research that means an original contribution to the knowledge of the scientific and technologic specialization chosen. This research will be the students' thesis.

Contact information

Telephone and fax: 4331-1852

E-mail: secid@fi.uba.ar

Applicants admittance

Applicants will be interviewed and evaluated by the Committee before which they must show:

- a) that they have solid preparation in basic sciences
- b) interest in the area chosen to develop the research work
- c) skills to translate fluently texts, technical and scientific papers in English and, if necessary, in some other language.

Counselors and Special courses plan

The Committee will propose the appointment of a Counselor before the Board. Such Counselor must be chosen among the members of the regular teaching staff and will be the bond between the students and the Committee.

Accepted applicants must attend and pass courses and/or seminars recommended by the Thesis Director. Such activities will be planned in such a way that they will be completed in not less than one year.

Thesis plan and Director.

Directors must be teachers or researchers belonging or not to this University, who have developed a research work endorsed by publications. Their functions are to: provide advice, orient and evaluate students on the elaboration and development of the thesis plan.

The thesis topic and plan must be presented before the Committee to be evaluated and eventual approval. The thesis must be original and unprecedented. Thesis developed abroad may be accepted, as exceptions. In such cases, if Directors belong to an institution from a foreign country, students must have a local Co-Director.

Thesis presentation and defense

The evaluation of the Thesis will be carried out when the writer requests it, with the Director's conformity. The writer must hand in five copies of the Thesis to the Research Department and Postgraduates. The copies will be sent to the members of the jury, who will issue a decision within two months. If the thesis is approved, there will be an oral and public test, which may be: approved, returned or rejected. The jury will be made up of not less than three researchers who will be, as far as possible, emeritus, or regular teachers of this University. The jury may also be integrated by renowned specialists in the area who are not teachers, in which case, the number of members will increase to four.

Specialization in Technological Applications of Nuclear Energy

General information

Director: Gerardo Quintana

Degree: Specialist in Technological Applications of Nuclear Energy (issued together by the National University of Cuyo and the University of Buenos Aires)

Approximate duration: 1 year

Enrolment periods: November and December

Department: Faculty of Engineering, Department of Physics and National University of Cuyo.

Contact information

Address: 850 Paseo Colón St. 2nd floor (C1063ACV)

Telephone: 4342-9184 Ext. 210/211

e-mail: dep.fisica@fi.uba.ar

Course description

Objectives

To provide the basic knowledge concerning technological applications of nuclear energy to professionals who will develop their productive activities with pacific nuclear uses. Among other applications, the course deals with the generation of energy through nuclear reactors, the obtaining and application of radioisotopes in the industry, medicine, agriculture, etc.

Syllabus

Elements of Nuclear physics. Elements of the science of materials. Elements of fluid mechanics. Elements of Physics of reactors. Elements of heat transference. Elements of nuclear material. Elements of control. Elements of nuclear safety. Introduction to experimental reactors. Elements of electro techniques. Introduction to non-destructive essays. Elements of management of radioactive waste. Elements of reactors chemistry. Elements of environmental engineering. Elements of electrical networks. Elements of corrosion. Elements of nuclear policies. Elements of nuclear fuels. Introduction to the application of radioisotopes. Elements of thermal machines. Introduction to powerful nuclear reactors.

Specialization in Industrial Social Sciences

General Information

Director: Julio Cesar Neffa

Degree: Specialist in Labour Social Sciences

Approximate duration: 2 years

Enrolment periods: consult at Faculty

Department: faculties of Economic Sciences, Social Sciences, Law, Philosophy and Art, Engineering and Psychology. Administrative office: Faculty of Social Sciences.

Contact information

Address: 2230 Marcelo T. de Alvear St. (C1122AAJ)

Telephone: (5411) 4508-3800/45 /3828

E-mail: posgrado@mail.fsoc.uba.ar

Course description

Objectives

To provide a professional qualification –general and specialised- to university undergraduates who wish to work in the human resources area (personnel administration, industrial relations, training, remunerations, etc) in diverse organizations: companies, public administration, and unions or business professional organizations.

To provide a professional qualification –general and specialized- to university undergraduates who want to work in the areas of analysis, elaboration, programming, promotion and evaluation of job policies as well as in teaching spheres.

Syllabus

Initial cycle: 1- Epistemology. 2- Notions of macroeconomics. 3- Work general history. 4- Socio-economic and labour statistics in Argentina.

Central core: (students must choose among the five areas depending on the MA degree, four subjects are compulsory)

a) Disciplinary areas

Area 1: economy: Compulsory subject: Labour and employment economy

Area 2: Sociology: Compulsory subject: Labour and employment sociology

Area 3: Law: Compulsory subject: Labour and social security law. Institutions.

Area 4: Psychology: Compulsory subject: Labour psychology

Area 5: Processes, organizations and job relations: Compulsory subjects: Job processes and job relations.

b) Thematic areas: (four compulsory subjects)

Area 1: conditions and environment

Area 2: Qualifications, professional training and competences

Area 3: Scientific, technologic and organizational innovations (includes topics concerning productivity, normalization, quality and competences)

Area 4: Human resources management

Area 5: Labour public policies

Internship.

Specialization in Data Mining and Knowledge Discovery.

General Information

Director: Dr. Alejandro Vaisman

Degree: Specialist in Data Mining and Knowledge Discovery

Approximate duration: 18 months

Enrolment periods: February

Department: Faculty of Exact and Natural Sciences, Faculty of Engineering. Administrative office: faculty of Exact and Natural Sciences

Contact Information

Address: Ciudad Universitaria Pabellón II (1428EHA)

Telephone: (5411) 4576-3333 Fax (5411) 4576-3351

E-mail: postgrado@de.fcen.uba.ar

Course description

Objectives

To train people in the fundamentals and practical knowledge so that they will be highly qualified to apply in a creative and rigorous way Data Mining and Knowledge Discovery methods within an interdisciplinary frame and using advanced concepts and instruments- such as the production of knowledge scientifically validated in that discipline.

To generate and maintain research, development and technological transference activities in the area of Data Mining and Knowledge Discovery.

To contribute to the generation and permanent upgrading of human resources for the university context.

Syllabus

Compulsory subjects: Automatic learning. Smart analysis of data. Data Mining. Statistical approach to learning and discovering. Data Mining and Knowledge Discovery in economy and finance. Data Mining and Knowledge Discovery in science and technology.

Master in Biotechnology

General information

Director: Humberto Cisale

Degree: Master of UBA in Biotechnology

Approximate duration: between 18 and 30 months

Enrolment periods: consult

Responsible institutions: Coordinating committee: made up of representatives of the Faculties of Agronomy, Exact and Natural Sciences, Veterinary Sciences, Law, Pharmacy and Biochemistry, Engineering and Medicine.

Department: Faculty of Pharmacy and Biochemistry, Faculty of Exact and Natural Sciences (annually alternated). Administrative office: Faculty of Pharmacy and Biochemistry.

Contact information

Address: 956 Junin St. (C1113AAD)

Telephone: 4964-8214

E-mail: posgrado@ffyb.uba.ar

Objectives

To provide high quality academic professional training in the development of research, teaching and productive development, as well as in the analysis of technologic, economic, social and legal aspects necessary for the design and evaluation of policies. To provide human resources specialized in the technical handling of biotechnology disciplines. To supply the university and the scientific-technical system with teachers, researchers and technicians updated and reoriented in the field of biotechnology basic disciplines.

Syllabus

First part: Genetic engineering. Economic aspects of biotechnology. Interaction of micro organisms with their environment and their application to fermentation processes. Cellular culturing and their biotechnological applications. Change of scales in biologic processes. Basic techniques of immunology. Virus culturing and purification. Energetic metabolism in microorganisms. Preservation of biotechnologically important microorganisms.

Second part: Cultivation of anaerobic microorganisms and identification through physical methods. Structural aspects of proteins and peptides. Technical applications of molecular biology to virus diagnosis: genomic catheters and chain reaction of polymerase. Application of modern biotechnology to agriculture. Quality control of biotechnology. Molecular indicators in plants. Biotechnological techniques applied to veterinary sciences. Transgenic animals. Biodegradation of industrial effluents. Vegetal biotechnology: manipulation of secondary metabolites in in-vitro cultures.

MA in Industrial Social Sciences

General Information

Director: Julio Cesar Neffa

Degree: MA in Labour Social Sciences

Approximate duration: 5 terms

Enrolment periods: consult at Faculty

Department: faculties of Economic Sciences, Social Sciences, Law, Philosophy and Art, Engineering and Psychology. Administrative office: Faculty of Social Sciences.

Contact information

Address: 2230 Marcelo T. de Alvear St. (C1122AAJ)

Telephone: (5411) 4508-3800/45 /3828

E-mail: posgrado@mail.fsoc.uba.ar

Course description

Objectives

To provide a professional qualification –general and specialized- to university undergraduates who wish to work in the human resources area (personnel administration, industrial relations, training, remunerations, etc) in diverse organizations: companies, public administration, and unions or business professional organizations.

To provide a professional qualification –general and specialized- to university undergraduates who want to work in the areas of analysis, elaboration, programming, promotion and evaluation of job policies as well as in teaching spheres.

Syllabus

Initial cycle: 1- Epistemology. 2- Notions of macroeconomics. 3- Labor general history. 4- Socio-economic and labor statistics in Argentina.

Central core: (students must choose among the five areas depending on the MA degree, four subjects are compulsory)

a) Disciplinary areas

Area 1: Economy: Compulsory subject: Labor and employment economy

Area 2: Sociology: Compulsory subject: Labor and employment sociology

Area 3: Law: Compulsory subject: Labor and social security law. Institutions.

Area 4: Psychology: Compulsory subject: Labor psychology

Area 5: Processes, organizations and job relations: Compulsory subjects: Job processes and job relations.

b) Thematic areas: (four compulsory subjects)

Area 1: conditions and environment

Area 2: Qualifications, professional training and competences

Area 3: Scientific, technologic and organizational innovations (includes topics concerning productivity, normalization, quality and competences)

Area 4: Human resources management

Area 5: Labour public policies

Complementary seminars and workshops:

Compulsory seminars: (two seminars) Research –quantitative- methodology applied to labour social sciences. Research –qualitative- methodology applied to labor social sciences.

Workshops. Internships.

MA Thesis

MA in Data Mining and Knowledge Discovery.

General Information

Director: Jose Alvarez

Degree: MA of UBA in Data Mining and Knowledge Discovery

Approximate duration: 18 months

Enrolment periods: February

Department: Faculty of Exact and Natural Sciences, Faculty of Engineering. Administrative office: faculty of Exact and Natural Sciences

Contact Information

Address: Ciudad Universitaria Pabellón II (1428EHA)

Telephone: (5411) 4576-3333 Fax (5411) 4576-3351

E-mail: postgrado@de.fcen.uba.ar

Course description

Objectives

To train people in the fundamentals and practical knowledge so that they will be highly qualified to apply in a creative and rigorous way Data Mining and Knowledge Discovery methods within an interdisciplinary frame and using advanced concepts and instruments- such as the production of knowledge scientifically validated in that discipline.

To generate and maintain research, development and technological transference activities in the area of Data Mining and Knowledge Discovery.

To contribute to the generation and permanent upgrading of human resources for the university context.

Syllabus

Basic compulsory subjects: Automatic learning. Smart analysis of data. Data Mining. Statistical approach to learning and discovering. Data Mining and Knowledge Discovery in economy and finance. Data Mining and Knowledge Discovery in science and technology.

Optional subjects: Artificial intelligence. Software administration and elaboration. Data warehousing. Information retrieval. Neuronal networks. Evolutional computer studies. Metaheuristics. Linear regression. Statistics for survey analysis. Multimedia and data mining databases. Thesis Seminars or workshops.

MA in Processes of Regional Integration - MERCOSUR

General information

Director: to be named.

Degree: MA of UBA in Processes of Regional Integration – MERCOSUR

Approximate duration: 2 years

Enrolment period: consult at faculty

Department: Faculties of Agronomy, Economy, Social Sciences, Law, Philosophy and Art, and Engineering. Administrative office: Faculty of Economy.

Contact information

Address: 2122 Córdoba St. (C1120AAQ)

Telephone: (5411) 4374-4448 / 4370-6156

E-mail: posgrado@econ.uba.ar

Course description

To provide basic training in: historic and international antecedents of MERCOSUR; situation of the countries that integrate it; the trend of the Common Market; the international relations of the sub region with the rest of Latin America and the world. To provide specialized training in: economic development; human development and environment; international relations; and legal and administrative order.

Syllabus

Basic cycle: The international contemporary order. Contemporary trends in technology. International relations of MERCOSUR. History of the nations that make up the MERCOSUR and their relations from the Tordesillas Treaty to the Asunción Treaty. Economic structure and economic and social development of Brazil, Paraguay and Uruguay. Compared economic and social structure and development of the nations that make up MERCOSUR. The Asunción Treaty. Human development and environment. MERCOSUR evolution. Languages: Portuguese.

Orientations:

- a) Economic development: Compared economic politics. National financial systems. Regional economies. Sectarian policies. Private companies. State reform and public companies.
- b) Legal and administrative ordering: previous processes of integration. Different processes of integration in Central America. Legal and institutional ordering in MERCOSUR.
- c) International relations: the contemporary world order. Globalization of the world order and endogenous dimension of the national and MERCOSUR development. Formation of

regional areas within globalization. History of international relations among countries that make up MERCOSUR. Present international compared politics. MERCOSUR and Latin America.

- d) Human development and environment: Education, training and information. Policies arranged on mayor groups. Basic ecological and environmental concepts. Processes of environmental degradation. Sustainable development and changes in the use of the soil.

MA in Public Health

General information

Director: Noemí Bordoni

Degree: MA of UBA in Public Health

Approximate duration: 2 years

Enrolment period: consult at Faculty

Responsible institutions: The MA Committee is made up of representatives from the Faculties of Agronomy; Architecture, Design and Urbanism; Economy; Pharmacy and Biochemistry; Philosophy and Arts; Engineering; Medicine; Dentistry; and Psychology.

Department: Superior Board of UBA

Contact information

Address: 950 José E. Uriburu St. 1st floor – Temporary venue- (C1114AAD)

Telephone: 4508- 3618 int. 219

E-mail: masp@rec.uba.ar

Course description

To train people that will be qualified to:

Approach public health as an interdisciplinary, inter and extra sectarian field

Acknowledge the relevance of taking into consideration social participants, their representations and practices in the field of public health.

Evaluate the present characteristics and trends of socio cultural, economic, environmental and political processes concerning their relations with life and health conditions

Propose courses of action to reduce the risks of falling ill and dying.

Promote research about public health concerning its different components:

- a) health situation
- b) health determinants
- c) health resources
- d) evaluation of the interventions in health as regards structure, process and results
- e) care quality

Solve health problems through a process of planning- programming- execution- evaluation.

Syllabus

Area I: Health situation and health-sickness determinants.

Module 1: Health situation: Objective knowledge of health and the need of information.

Epidemiology. Epidemiologic method. Analysis design. Decision analysis. Elaboration, presentation, analysis and interpretation of data. Statistics and variables. Statistical inference. Epidemiological transition and new diseases.

Module 2: Health and society: Social issues in the field of health. Analysis of health conditions regarding socio demographic structures and processes. Social construction. Life and vulnerability conditions.

Module 3: Health and economy: Introduction to health and economy. Economic groundings of health. Economic characterization of the health area. Equity, accessibility and vulnerability.

Module 4.: Health and environment: Environment and development. The environment and its impact on health. Natural environment. Environmental impact. Primary food production. Man made environment. Basic urban drainage. Environmental diagnosis. Synthesis.

Module 5: Bioethics and health: Ethics. Human beings. Intimacy rights. Human rights. Public health.

Area II: Change and transition in Health

Module 1: Politics and health: Health policies. State and society. Compared social policies. Social policies in Argentina.

Module 2: Sectarian transformation.

Module 3: Human rights, ethics and social responsibility.

Area III: Health resources, systems and services:

Module 1: Strategies and interventions in public health

Module 2: Characterization and management of resources in health (human, physical, financial and technological)

Module 3: Health systems: organizations and services.

Area IV: Application – Fieldwork

Area V: Research.