

# Brief history

ES University is a private, autonomous, non-profit educational Organization, which prepares undergraduate and graduate students with the highest human, ethical and scientific qualities in different areas of knowledge along with a special emphasis in health related programs.

Since it was founded on June 5, 1977, CES has permanently strived to innovate in the academic preparation of its students, the internationalization of the Institution and the development of a virtual educational proposal with the objective of achieving national and international alumni recognition.

CES is highly recognized by the social and academic community. This fact is reflected by the accreditation of its Medical and Dental programs by the National Ministry of Education, which made it the first Institution of higher education to receive this distinction in Colombia.

As part of its academic endeavors, CES has developed a great variety of graduate programs that meet the expectations of our alumni and the need for specialized resources in the medical field.

On March 22, 2007, CES received resolution 1371 from the Ministry of Education which acknowledges it as a University. This change from institute-University to University was made as a result of both the wishes and decision made by the academic community, reflected in the 2000-2010 development plan.

Accomplishing this acknowledgment implied an improvement in all areas of the institution, following the guidelines established by the founders, the superior council, and the general outline established by the development plan, always focusing on the three basic university tasks: investigation, teaching and extension.

# **CES** Founders

### Physicians

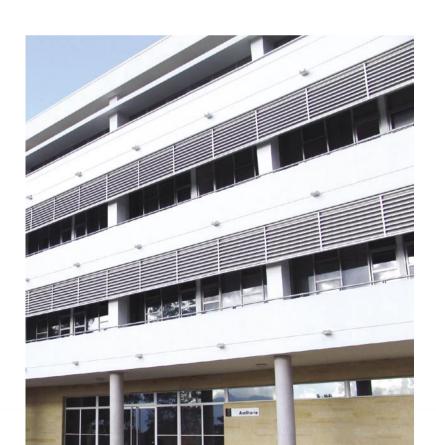
Hernán Vélez Atehortúa Luis Alfonso Vélez Correa Carlos Augusto Agudelo Restrepo Gonzalo Calle Vélez Gerardo Cadavid Gómez

### Dentists

Guillermo Cárdenas Jaramillo Alfonso Escobar Rojas Luis Carlos Muñoz Uribe Gabriel Tobón Cambas

#### Nurse

Hna. Celina Sierra Sierra







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# Mission

 $C_{\text{ES}}$  educates free, upright, autonomous, ethical, scientific and universally competent



# **General Principles**

CES is a private, national, autonomous, non-profit, self-sustainable University which offers undergraduate and postgraduate educational programs in different knowledge areas emphasizing in health related programs at a technical-professional, technological and professional level with the highest human, ethical and scientific qualities, thus stimulating cultural, social, ideological, political and religious pluralism.

CES provides a comprehensive education program for its students through constant curriculum renovation and the promotion of self-training and innovation with the support of a highly gualified teaching faculty committed to institutional development. CES also promotes its faculty and staff to develop a career project that will make it possible for them to achieve their personal, professional and institutional goals.

The programs at CES are designed to guarantee the construction and permanent development of its institutional educational project, with high standards of quality and excellence seeking to provide our society with critical, creative, innovative, and ethical graduates capable of leading transformation processes in their social and professional environment.

The development of research investigation among faculty members and students at CES is a permanent goal, and in order to achieve this, special importance is given to the development of research lines and groups. Moreover, CES also has an important presence in the community through different extension programs such as consulting, ongoing education, and teachingassistance programs.



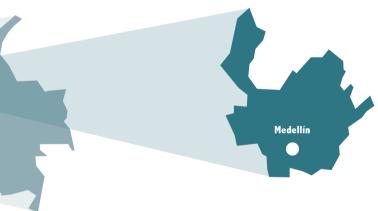


ounded in 1616 in the "Valle del Aburra" or Valley of Aburra, is Medellin, Colombia's second most important industrial and manufacturing center; this city which maintains its customs and traditions began its development process in the 19th century with the coffee culture boom and with textile and commercial industry development which have turned it into a vibrant and modern city.



# Medellin, CES' headquarters

The city of Medellín, also known as "City of Eternal Spring", is located in the Antioquia Department in the Colombian Andes range. The city has a mild weather throughout the year with an average temperature of 24 degrees centigrade.



The city is located in the Colombian coffee region, known for its tradition, folklore, crafts and festivals. It is also popular for its "fondas" (traditional restaurants) where the famous "bandeja paisa", a delicious meal that is representative of our region and our country, is served.

#### Events

Medellin is proud of its flowers, fact which can be appreciated through the annual Flower Fair (Feria de las Flores), an event held in the month of August. Its main attraction is the "Desfile de Silleteros" which consists of a parade leaded by country people that come down to the city to exhibit the floral arrangements that they themselves design in a "silleta" (a sort of huge wooden tray that is placed on their backs) and walk through the city, creating one of the most colorful and beautiful spectacles in the world.

#### Cultural life

The city has a rich and intense cultural life, product of a mixture of traditions and openness to other cultures evidenced by the presence of a variety of gastronomical, musical and entertainment offers with influences from around the world.

Medellin has a variety of festivals, galleries, bookstores, parks and restaurants that provide our visitors with numerous leisure activities. The city has many museums like the Pedro Nel Gomez Museum, the Modern Art Museum, and the internationally recognized Museum of Antioguia, where the most important collection created by the famous artist Fernando Botero can be found.



# University Campuses and training facilities

and financial center.

commercial area.

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CES University has various spacious and modern academic facilities distributed throughout Medellin and surrounding locations. These include a Central Academic and Administrative Campus located in the prestigious Poblado area, amongst its exclusive residential, commercial

**CES Clinic:** Located downtown close to our Metro and other public transportation routes.

CES Sabaneta: A clinical and investigation center located in the southern part of our city.

**CES Almacentro:** A specialized Dentistry center located in an important industrial and

**CES Girardota:** A health center that assists the northern community of our city.

**CES Veterinary and Zootechnics center:** Located in the eastern area, surrounded by nature. This 27-acre facility also serves as a center for future expansions.

#### **CES** Clinic

The CES Clinic's mission is to offer the community a medical center with outstanding human. ethical and scientific gualities, where it is possible to articulate excellent teaching and health care assistance.

The Clinic has grown significantly in the human resource area, in the improvement and construction of its site as well as in technological renovation over the last years with both a highly expanding and gualified medical and administrative staff, and a significant expansion which has led to an increase in the number of hospital beds, new services and acquisition of state of art technology.

#### Service

The Clinic offers 24 hour medical and dental emergency service. It has 6 fully equipped operating rooms for emergency and programmed surgeries, a special, post-surgical care unit and an intensive care unit.

General and specialized medical services include:

- General surgery
- Esthetic and Reconstructive Plastic surgery
- Dermatology
- Gynecology
- Ophthalmology
- Orthopedics Thoraxic Surgery
- Eyes, Ears, Nose and Throat -- EENT-
- Neurosurgery
- Neurology
- Pediatrics
- Pediatric and Adult Pneumology
- Pediatric Gastroenterology
- Urology
- Internal Medicine
- Medical and Dental Emergencies
- General Dentistry
- Pediatric Dentistry
- Endodontics
- Orthodontics
- Pediatric Orthodontics

Prsentently, the clinic is designing a new hospitalization and services site wich will improve the coverage of the population health needs.





CES Sabaneta has grown significantly, increasing and improving its facilities and becoming headquarters for important academic units which give this Service Center another dimension.

The division has 87 dental units to provide general and specialized attention. The service at CES Sabaneta is represented in the following activities:

- Dental emergencies General dentistry
- Preventive dentistry
- Total prosthetics

- Orthodontics
- Endodoncy (conduct treatment)
- Periodoncy (gum treatment)

- Estomatology
- Oral and maxillofacial surgery
- Conscious sedation with nitrous oxide

These services are provided by the teacher-student team at both undergraduate and graduate levels.



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The hospitalization service offers 121 beds and the intensive care unit has the capacity to attend 6 patients. For the diagnostic support we have pathological and clinical labs, a radiology unit and other diagnostic aids such as tomography, ultrasound, bronchoscope, cytoscopy and mammography.

#### **CES** Sabaneta

This is one of the most important Centers at CES where Dental, Dermatology and Psychology service is offered. The Center is also home for the Colombian Institute of Tropical Medicine and four important research laboratories which support CES Research Groups and teaching: physiology, march lab, biomaterials and tissue fostering. It is also headquarters for the legal office, practice center and community service for the Law faculty.

#### **Dental Service Division**

- Fixed prosthetics
- Removable prosthetics
- Dental implants
- Pediatric dentistry
- Dental operatory (amalgam and resin fillings)
- Esthetic dentistry (teeth whitening)
- Oral radiology (Periapical, occlusal, cefalic y panoramic)
- Diagnostic aid (models)

#### **Dermatological Service Unit**

The Dermatological Service unit offers specialized medical attention for skin disease and cosmetology treatments, with scientific, academic and teacher support by CES.

#### Services offered:

#### Consultation in:

- Pediatric Dermatology
- Cosmetic Dermatology
- Dermatological Surgery
- Oncology (skin cancer)
- Acne
- Vitiliao
- Hyperhidrosis
- Nails
- Hair
- Psioriasis

Diagnostic and therapeutic procedures:

- Phototherapy: PUVA and UVB
- Biopsies
- Electro coagulation
- Scar treatment
- Botulinic bacteria / toxin application
- Peelina
- Microdermoabrasion
- Application of filling materials
- Micro-grafts
- Minor surgeries
- Iontoforesis
- Criotherapy
- Infiltrations
- Esclerotherapy
- Laser depilation



of Antioquia.

## Services:

- Vaccination

Service center that depends directly on the psychology faculty whose main objective is to integrate the work of mental health professionals (psychologists, neuro-psychologists) to offer our patients a specialized and qualified service.

#### Services:

- Psychological Attention Neuropsychological Attention (diagnosis and counseling for children and adults with learning disabilities) • Family and marriage counseling Occupational therapy • Juvenile and Infant Psychiatry
- Consulting services for Educational Institutions (students and teachers)

#### **CES Law School - Judicial Consulting Service:**

Obiective

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#### Colombian Institute of Tropical Medicine ICMT - CES Antonio Roldan Betancur

This non-profit, Research Center distinguished internationally, for its academic excellence is a mixed Corporation managed by CES in association with the Government of The Department

- General and specialized microbiology clinical Laboratory
- Clinical Veterinary Laboratory
- Diagnosis and Treatment for Tropical Diseases: Malaria, Leishmania and Chagas Disease mainly.
- Investigation in all tropical medicine areas.
- Investigation in molecular biology

#### **Psychological Attention Center**

The Judicial Consulting Service at CES is conceived as a service unit with the capacity to offer judicial consultancy in all the different branches of law, and to defend and impulse mechanisms that provide appropriate solutions to conflicts and support citizen education of individual and community rights and duties in general.

To contribute to the education of autonomous, ethical, scientific and universally competent attorneys, prepared with solid knowledge and abilities to understand, analyze, interpret, apply, investigate and reflect upon our Colombian legal system. All of the above based on principles and values that guide our social rights, strenghthening students' practical training in order to articulate the previously mentioned abilities through professional practice at both national and international levels.

#### Specific Objectives

Support the practical education of our law students, so they can gain the necessary skills and knowledge to face professional practice with confidence.

Link students with the activities, tasks, institutions and people among law-oriented working atmospheres where they will eventually practice.

Complement the investigative education of the student, who after analyzing general social needs during his/her academic performance will be in capacity to reflect on solutions.

Facilitate judicial and extrajudicial legal counseling, for people with low economic resources through consultation and by representing these clients before judicial and administrative authorities, elaborating concepts, reports, contracts and other types of legal documents.





## **CES** Almacentro

CES Almacentro is a specialized Dental Center which has a highly qualified staff of specialists who offer services in Prosthodontics, Periodontics, Endodontics, Orthodontics, Pediatric Dentistry and Esthetic Dentistry.



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#### **CES** Girardota

CES Girardota is Community Health Center located in the northern area of Medellin, which offers a wide variety of medical and dental services such as specialized consultation in internal medicine, pediatrics, general surgery, dermatology, gynecology, ophthalmology, orthopedics, EENT, urology, psychiatry, nutrition, physical therapy, psychology, general dentistry, endodontics and orthodontics.

In addition to the above mentioned areas, ultrasound, endoscope, clinical laboratory, radiology and electrocardiography diagnostic services are also offered.





The Medical Veterinary and Zootechnics Center is a modern, state of the art teachingassistance facility which serves as support for The School of Veterinary Medicine and which offers services in diverse areas. The Center offers a variety of clinical and hospitalization services for large and small animal species, such as surgery, imaging center, vaccination, post-operation recovery rooms, independent guarters and cages for different animal species as well as comfortable housing facilities with a convenient glass viewing system for Veterinary Students who remain on call, to monitor recovering animals overnight

This modern infrastructure includes an appropriate information system, operating rooms for large and small species with communicating classrooms through a closed television circuit system as well as a panoramic window for direct visualization. A sophisticated pulley-elevated transportation system which can rotate animals 360 degrees, and move them in and out of the operating room to recovery rooms. Moreover, outpatient offices are equipped with physical examination devices connected to monitors that allow tissue viewing on an 18" screen, a permanent oxygen supply and x-ray and Ultrasound services.

The Center also provides Consulting Services in different agro-technical areas such as animal health and reproduction, genetics, nutrition, soils, waters, environmental sanitation, waste -disposal, and agrotechnical management.

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### Medical Veterinary and Zootechnics Center

# Undergraduate Schools and Programs

#### Study Plan

The Humanistic Area provides the theoretical elements of social, political, philosophical and economic nature which are necessary in order to contextualize different legal disciplines.

The Complementary Education Area is composed of theoretical and practical, interdisciplinary knowledge with the goal of supporting and complementing the student's training in forensics, criminalistic disciplines, management and communications.

The investigation Area: Investigation, as an institutional policy has a permanent presence directed towards the formation of students in methods and principles of investigation, that allow them to resolve problems and expand their knowledge in the law field of their interest.



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## LAW SCHOOL

his program seeks to prepare professionals with a solid philosophical and hermeneutical background, deep knowledge of national and international legislation, with optimal group, interpersonal and communication, skills. Professionals open to the constant changes of modern society with the managerial ability to lead companies and innovative projects in different areas of national life.

The undergraduate Law Program consists of ten academic semesters with a dynamic and flexible, horizontal curriculum, which is composed of an Area of judicial formation, a Complementary Education Area and a Practice-Internship Area which is organized in two cycles. The first cycle consists of basic fundamental courses while the second one is an emphasis cycle completed in the latter years of the program whose objective is to go deeper into specialized subjects selected by students according to their academic preferences, from an integral perspective, about specializad items as social security and international law.

The Judicial Area provides the concepts and essential categories of judicial knowledge

Internship and Practices: This area revolves around activities at The Legal Office which expose students to different aspects of a law practice, through intervention in judicial processes and other fields like consulting, defense of individual and collective rights before private and public legal institutions, and mediation in conflict resolution. Students also have the opportunity to carry out internships outside the University such as Conciliatory Centers, Private Law Practices, companies and different types of organizations, amongst them those dedicated to social security.





Medicine at CES was the first higher education program to be accredited in Colombia by the National Ministry of Education, which highlights and certifies the high academic standards offered to our students.

## Study Plan

The organization and coherence of the study plan designed, allows activities to be conducted under a high integration level, progressive repetition and with a balance between theory and clinical practice.

Between the fifth and eighth semesters **the Intermediate Level** is covered. Its main focus is to expand the understanding of phenomena related to prevention, diagnosis, treatment and rehabilitation of the most prevalent diseases in adults, children and mothers. Academic and clinical activities are carried out in internal medicine, pediatrics, surgery, dermatology, psychiatry, orthopedics, anesthesia, gynecology, obstetrics and other specialties.

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## MEDICAL SCHOOL

he objective of the Medical School is to prepare professionals with the highest personal and scientific qualities who are committed to the progress of society and can adapt to a dynamic and changing society. The Program consists of twelve semesters and the degree conferred is that of Medical Doctor Surgeon.

The educational and methodological teaching strategies used at CES are innovative and serve as an important model for graduates to take leading roles in the health sector both at a national and international level.

During the first four semesters **the basic level** education is completed, level during which the student learns the physiology of the body and is able to understand it as a psycho-somatic and social unit. The program is focused on the study of cardiovascular, respiratory, renal and digestive systems among others. In this process there are also other courses that take on importance, such as morphology, physiopathology, biochemistry and physical exams, among others.

Other basic complementary courses in computer science, sociology and fundamentals of public health are also offered in this level.

During the **advanced level** (last two years of our program) we emphasize in the development of clinical skills and attitudes in order to apply the knowledge acquired during the career. The last year is called "internship", where 100% of the activities are practical and the student

remains in the clinic environment with his/her teachers. This last level is very flexible because the student can decide on the medical area of greater interest.

During these three levels, and in each semester of medical formation the student has the possibility of learning and developing **investigations** as an element that will make it possible, after graduation, to contribute to scientific knowledge and maintain a continuous upgrading process. In the same way, the Socio-Humanistic area has a constant and important role in all our academic semesters, allowing our students to gain a solid human formation as well as the cultural knowledge to provide personal and social growth.

## **Clinical Residency Programs**

Clinical graduate programs were initiated in 1980 and their curricula is based on an individualized training of professionals who are under the permanent supervision and evaluation of specialists in each area.

The programs began with clinical residencies in the faculties of medicine and dentistry. Their objectives are as follows :

- To grant health professionals the opportunity to improve their knowledge and their attitude regarding a specific area of the Medical profession.
- To project specialists' knowledge and attitude towards the community.
- To promote interest and motivation in research among specialists, so they may assume positions of scientific leadership.
- To train professionals who are gualified, not only in the scientific field, but also in ethical, human and social values.

#### **Postgraduate Programs in Medicine**

- Anesthesiology
- Cardiovascular Thoraxic Anesthesiology
- Cardiovascular Surgery
- General Surgery
- Facial Plastic Surgery
- Dermatology
- Echocardiography
- Emergency Medicine
- Electrophysiology, Arrhythmia and Pacemakers
- Gynecology and Obstetrics
- Human Reproduction



- Internal Medicine
- Ophthalmology
- Pediatrics
- Radiology
- Urology
- Psychiatry

## Postgraduate Programs in Public Health

These programs initiated in 1986 by initiative of the clinic and hospitals directors, who perceived the need to have health professionals, with the ability to carry out an integral form of management in their organizations, by means of real management standards. In 1987 the ICFES approved the Hospital management specialization program as a CES-EAFIT agreement, which initiated in 1988.

Health Auditing

- Epidemiology
- Health Economics
- Health Legislation

- Work and Labor Medicine
- Corporal Damage Assessment
- Mental Health Damage Assessment
- Health Market Studies
- Disaster Prevention Management



 Laboratory Medicine Medical Education

• Fellowships in Dermatological Surgery and Digestive Endoscope

Since the early 1990s in accordance with the new Social Security legislation in Colombia, CES created a Division which offers Postgraduate Programs in Public Health with an academic content that responds to the current and future needs of the health sector, in order to improve the administrative processes of institutions and health programs, in which more successful decision making is of utmost importance.

- Occupational Health Management
- Public Health Management
- Social Security Management
- Management of Health Service Institutions
- Marketing in Health Services
- Health Promotion and Communications
- Social Protection Management

#### Jndergraduate Schools and Programs

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Some of these programs are also offered in other Colombian cities in agreement with local institutions:

#### Universidad del Rosario - Bogotá

Health Auditing, Work and Labor Medicine, Management of Health Service Institutions, Public Health Management, Occupational Health Management and Epidemiology

**Universidad Autónoma - Bucaramanga** Health Auditing, Public Health Management

**Universidad ICESI - Cali** Health Auditing, Health Management

**Universidad Mariana - Pasto** Health Auditing, Public Health Management

**Alcaldía y Universidad Mariana - Puerto Asis** Public Health Management

**Universidad de Nariño - Pasto** Epidemiology

**Alcaldía del Municipio de Chigorodó - Antioquia** Public Health Management

**Colegio Colombo Darién - Apartadó** Health Auditing, Public Health Management, Management of Health Services Institutions



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## Masters in Epidemiology

This masters program was created to respond to the dynamic changes in epidemiology, area in which CES has gained great strength. The program strives towards the preparation of professionals that contribute to the creation of the best scientific evidence applied to main health issues through studies conducted by researchers with solid methodological formation and critical thinking skills. The program also intends to involve them in high academic profile researches, to lead research groups and generate skills in the analysis of the current health situation and in decision-making processes.

## Master's Degree in Health (CES- El Rosario University)

This master's degree program is presented as a new proposal in agreement with both universities' educational projects to cope with the difficult situation the health sector is facing characterized by the failure of public and private hospitals which have had to close down due to the shortage of executives trained in business administration with skills for strategic decision making and leadership in an increasingly difficult and competitive environment.

## Doctorate in Medical Sciences (CES – UPB – CIB Agreement)

In 1997 the Medical Science Doctorate was created in association with the UPB University and the CIB (Center For Biological Investigations) in order to prepare researchers in Medical Sciences with high scientific and human qualities, capable of developing investigation processes well recognized by the academic community. The program works in three basic lines: Microbiology, Cardiology and bioengineering.

## VETERINARY MEDICINE AND ZOOTECHNICS SCHOOL

he goal of this program is to prepare professionals with a comprehensive approach from a scientific and humanistic point of view. Professionals who are innovative and creative researchers capable of leading the sector, creating enterprises and generating employment as a means to contribute to the development of the country with effective solutions .

#### **Study Plan**

In order to prepare a Zootechnics Veterinarian with high guality standards, a ten semester period is required. The first eight semesters are oriented towards theory-practice activity and the last two are completely practical.

The program has a horizontal, dynamic and flexible curriculum which is methodologically distributed in four areas: Biological, Economic-Administrative, Research and Social-Humanistic.

The Biological area includes all basic fundamentals applied to animal health and production following a methodology that integrates basic sciences simultaneously around each one of the different systems that make up an animal organism.

The Economic-Administrative area of the program is an essential aspect of training which provides graduates with the necessary tools to make them responsible for their own professional and personal growth process, the development of leadership abilities, employment generation and the strengthening of economic growth.

**Research** plays a transcurricular role that seeks to promote a search for answers to problems and situations posed during their practice; answers that will allow, students, even from the very beginning of their careers, to expand their knowledge in the field.

The Social-Humanistic area also constitutes an important part of the program. Its goal is that of preparing individuals who can contribute to society in general as both professionals and citizens.

In accordance with Institutional policies, students are also required to demonstrate proficiency in English as well as computer management and software skills as graduation requirements.



animal surgeries.



## Postgraduate Program for the Veterinary Medicine and Zootechnics School

The Veterinary Medicine and Zootechnics faculty offers a specialization program in Veterinary Anesthesiology. This program is completed in a two-year period and is the first of its kind in Latin America. It's main objective is to raise the guality standards for anesthetic processes in

For the practical component in the student education process CES has the Medical Veterinary and Zootechnics Center that has a modern infrastructure and hi-tech equipment as well as different scenarios available to support the research and learning process for this specialization.

## DENTAL SCHOOL

he Dental School trains professionals in two main areas:

• Professional training for the prevention, diagnosis, and attention to oral health problems • Development of social awareness and responsibility in individuals committed to society. The Dental program is ten semesters long and confers the title of Dentist.

#### Study Plan

The curriculum is divided into three areas which consist of different courses that seek to develop professional skills and attitudes in a logical and sequential manner.

Personal Development Area: Offers students a comprehensive view of the individual from a humanistic perspective in order to offer students a wider scope and critical view of science. Scientific-Technical Area: Provides the academic and technical basis necessary for future professional education.

Clinical Practice Area: Integrates all the acquired knowledge with the practical aspect of the profession in order to make it possible for the student to develop the necessary clinical skills so that he/she can provide patients and community with comprehensive attention based on prevention.

### Postgraduate Dental Programs

The Dental School initiated its advanced education programs with Pediatric Dentistry in 1988 and progressively started with other specializations offering six programs to the present.

#### The programs offered are:

- Pediatric Dentistry
- Endodontics
- Orthodontics
- Periodontics
- Maxillofacial Surgery
- Prosthodontics



## SCHOOL OF PSYCHOLOGY

### Study Plan

The program consists of ten academic semesters focusing on areas of Clinical Psychology, Neurosciences, Psychosocial intervention, Research and Mental Health.

The psychobiological area, gives the student the morpho-physiological fundamentals of behavior and intends to prepare a psychologist with special strength in Neurosciences.

The Mental Health Area plays an important role in the curriculum, providing future professionals with the tools to develop social and community projects and programs.

### Mental Health for the Child and Adolescent

Its main objective is the education of competent professionals in the management of services and programs for the promotion and prevention of mental health in the infant and young community. It also strives to prepare individuals with the skills to conduct research on aspects related to the development and life-styles that act as risk or protection factors for the mental health of a certain community, to provide diagnosis for mental disorders, to determine its etiology, and study and decide on the design of interventions directed towards individuals, institutions and communities.



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his program seeks to prepare high quality professionals with ethical criteria in psychology, strength in areas such as psychobiology, schools of thought, mental health and research; Professionals capable of facing different psychological problems through both intra and interdisciplinary approaches, with the ability to get involved in mental health programs being developed in several areas such as clinical practice, organizations, education, legal and social work.

## Post-graduate Programs in Psychology

#### Mental Health and Community Living

Its objectives are to offer professionals of Psychology and Psychiatry the legal basis to consider when evaluating the mental health damage of an individual and to be able to make reports with scientific, legal and ethical foundations.

#### Specialization Evaluation in Damage of Mental Health (Emphasis on Clinical and Forensic Psychology)

The specialist in Evaluation of Mental Health Damage, be it a Psychologist or Psychiatrist, will acquire the fundamental knowledge of the legal bases of mental health, in order to give an expert opinion with the appropriate scientific and technical requirements in the different areas of law.





## PRE-HOSPITAL CARE TECHNOLOGY **PROGRAM (PARAMEDICAL MEDICINE)**

he Pre-hospital Care Technology Program objective is to offer students the solid academic knowledge and clinical abilities so they may provide initial emergency care to patients; carry out rescue activities, assist victims in emergency and disaster situations as well as to evacuate and transport them to the appropriate centers. They are also prepared to organize management activities and support in logistics for emergency situations and interact with industries in the prevention, promotion and attention of emergencies.

Study Plan:

patient management.

**Operational Area:** 

Public Health Area: disaster situations.

presented.

**Research Area:** 

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The academic program consists of six semesters, which are distributed in the following areas:

#### **Psychobiologic Area**:

The purpose of this area is to help students develop the technical knowledge and skills for

This area focuses on providing students with knowledge about the different types of emergency vehicles as well as communication, salvage and rescue techniques.

This part of the program offers complete coverage of the different health and security systems in the country and the technical knowledge for the control and management of emergency and

#### Socio- Humanistic Area:

This area provides a basic humanistic preparation that will allow the students to understand and answer to social and individual problems with an open and flexible mind in each case

Students learn about the basic concepts and fundamentals of research.

## PHYSICAL THERAPY

he goal of the Physical Therapy Program is to prepare highly qualified, autonomous professionals with a good level of social commitment that can provide solutions related to diverse health problems and body movements especially in cardio respiratory, neuromuscular and skeletal-muscular prevention and maintenance.

#### Study Plan

The Program consists of ten academic semesters with a dynamic, horizontal and flexible curriculum distributed in the following areas: Basic-Professional, Research, Management and Social Security and Humanities. The approach of the program responds to the analysis of human physical movement and to the comprehension of the health needs of the population. The courses allow to realize:

Biological Analysis of movement (Morfophisiology, histoembriology, biophisics, biology)

Basic Motor Integration (biomechanics, motor and Physiological exercises)

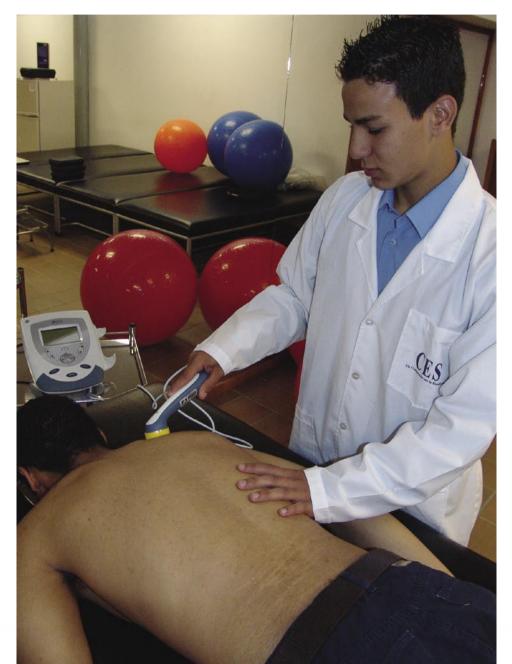
Evaluation and diagnosis in physical therapy applied to the analysis of movement and its cardio respiratory, neuromuscular and skeletal-muscular alterations.

Physical Therapy interventions in different modalities as physical means, cardio respiratory therapy, manual techniques and neuromuscular facilitation techniques.

Internships in health related institutions, including institutions where Physical Therapy with infant, young, adult, and third age patients is necessary.

Analysis of the health of our population and its health systems.

Consolidation of the social-humanistic formation (anthropology, political sciences, ethics, entrepreneur spirit).



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# Joint Programs

CES has established educational cooperation agreements in order to join academic, administrative, economic, and infrastructure efforts in order to prepare highly qualified individuals. Currently there are agreements for undergraduate programs with The Escuela de Ingenieria de Antioquia -EIA- (Antioquia School of Engineering) for the programs in Biomedical Engineering and Biology.

#### Joint Programs

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## **BIOLOGY (CES – EIA Agreement)**

his program seeks to prepare professionals which respond to the demands of society, with solid scientific and ethic foundations, responsibility, and social sensitivity, with knowledge of the need of the surroundings and the promotion of scientific research and the creation of technologically based enterprises which have a national and international impact.

#### **Plan of Studies**

The Plan of Studies is structured in the following areas: Basic Sciences, Research, Social Sciences and Humanities and Entrepreneurship.

Basic Science courses constitute the basis for understanding physiological, cellular and molecular phenomena in live organisms. These courses offer the student analytical tools for the development of new diagnostic methods and alternative handling. Biotechnology offers the fundamentals for application of advanced technologies in the use of biological resources.

Humanistic and Entrepreneurship areas allow the student to acquire skills for the creation of companies and projects, thus contributing to employment generation.



**Study Plan** 

cultivation.

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## **BIOMEDICAL ENGINEERING** (CES - EIA Agreement)

his Program prepares professionals who are creators of new paths and approaches which lead to improvement in quality of life.

The Biomedical Engineer develops specific scientific, technological and administrative solutions optimal for the human health area.

The study plan is structured in three academic cycles which are: Basic, Intermediate and Advanced Levels of Training.

The specific study areas are described below:

Rehabilitation: Design and implementation of solutions for individuals who are physically impaired. It focuses on the development of aids for communications, movement and learning.

**Clinical Engineering:** Technical, logistic and administrative management of hospitals and clinics. It has an important component of management of biomedical technologies, metrology, infrastructure, hospital safety and also Telemedicine.

**Health Biotechnology:** Intervention at a molecular and cellular level in order to provide technological solutions to health problems. All this based on genetics and cell and tissue

**Biomaterials:** Design, development and application of different biocompatible materials for the construction of instruments, devices and implants used in health assistance.

**Bio-instrumentation:** Monitoring and processing of biological signals and images in the diagnosis and treatment of diseases. Design and development of biomedical devices and screen imaging devices.

# New Programs

Taking advantage of the strengths of the University, CES has created The School of Administrative Sciences and in the medium term will develop three undergraduate academic programs in Administration, Economics and Accounting which will be based on an international vision, social security and applied research.

## Postgraduate Studies in Enterprise Management (CES - Universidad del Rosario Agreement)

In agreement with the University of el Rosario University with which we have been working for over ten years in public health programs, we have consolidated a new program offer in the enterprise area, offering three specializations:

- Business Administration
- International Business
- Marketing

The objective of this agreement is to offer excellent programs, under the new dynamics of the current business world that demands professionals with better education capable of facing the new challenges of a global economy and today's business atmosphere.



CES's mission incorporates education with scientific criteria, as a fundamental element to professional practice, preparing students that can apply the scientific method in specific problem solving, thus elevating their professional competence and guality. In concordance with world tendencies to gather knowledge in search of systematic and valid production of knowledge, the University has directed its efforts towards the creation of research groups, in which teacher efforts and expertise and students research interest meet. These are the research groups:

Cutaneous Mycosis.

MENTAL HEALTH RESEARCH GROUP Areas: Substance abuse and associated factors, Ethics and Mental Health, Methodology for applied research in Mental Health, Prevalence of Mental Problems in Population Groups, Occupational Mental Health, Liaison Psychiatry, Mental Health in Women, Mental Health and Violence.

Areas: Impact Analysis of Preventive and Curative Health Measurements, Auditing and Quality in Health, Emergencies, Prehospital Care and Disasters, Cost/benefit of Public Actions, Evaluation of Health Administration Action, Health Service Evaluation, Social Impact of Postgraduate Programs in Public Health, Childhood and Health and Health Situation.

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# **Research** Division

hrough research, which constitutes an essential part of University tasks, it is possible to develop a harmonic scientific culture in compliance with academic education in all its dimensions.

The institutional research policy began with the 2000-2010 development plan, in which the desired scientific values of our professionals are described. These values were conceived so that our students could acquire fast problem solving skills based on the depth of knowledge, the continuous updating and adoption of new technologies that give them access to relevant, scientific information. In addition to the previously mentioned concepts, the development of essential skills to create and develop research proposals as well as strengthen the capacities for the critical evaluation of available, scientific information.

### CES DERMATOLOGICAL RESEARCH GROUP

Areas: Dermatology, Occupational Dermatoses, Photodermatology, Oral Injuries,

## CLEFT LIP AND PALATE, ORAL PHYSIOLOGY AND CRANIOFACIAL GROWTH RESEARCH GROUP (CES-LPH)

Areas: Growth and Development, The Disabled, Quantitative Oral Physiology, Cleft Lip and Palate.

### PUBLIC HEALTH OBSERVATORY AND RESEARCH GROUP

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#### BASIC SCIENCES RESEARCH GROUP

Areas: Autoimmunity, Cellular Biology and Tissue Remodeling, Clinical and Molecular Epidemiology, Sexual and Reproductive Physiopathology, Physiopathology and Cardiovascular Epidemiology.

### GYNECOCES RESEARCH GROUP

Areas: Fetal well-being, Preeclampsia.

#### MEDICAL EDUCATION RESEARCH GROUP

Areas: Medical Education, New Technologies Applied to Education.

### **BIOENGINEERING RESEARCH GROUP (GIB) CES-EAFIT**

Areas: Bio-instrumentation, Biomechanics, Computational Modeling, Processing of Medical Images and Teleradiology.

### **BIOMEDICAL ENGINEERING RESEARCH GROUP** (CES - EIA)

Areas: Biomechanics and Rehabilitation Engineering, Biotechnology in Health and Biomaterials, Clinical Engineering, Medical Signals and Images.

#### TROPICAL MEDICINE RESEARCH GROUP

Areas: Molecular Biology, Brucellocis, Cysticercosis, Biotechnology, Dengue, Chagas Disease, Medical Entomology, Leishmaniosis, Leprosy, Leptospirosis, Malaria, Intestinal Parasitosis, Salmonella, Toxoplasmosis, Treponematosis, Tuberculosis.

#### SEXUAL AND REPRODUCTIVE HEALTH **RESEARCH GROUP**

Areas: Laparoscopy, human reproduction, women's integral health.

INTERNAL MEDICINE RESEARCH GROUP Areas: Cardiovascular Diseases, Infectious Diseases.

#### HEART DISEASE RESEARCH GROUP (CES – Medellin Clinic) Areas: Genetic Factors in Arterial Hypertension, Heart Disease Genetics.

#### CES PEDIATRIC RESEARCH GROUP

Areas: Integrated Management of Childhood Illness (IMCI Strategy) Infectious Pediatric Diseases, Pediatric Gastroenterology and Nutrition, Pediatric Pneumology, Young Children for Gestational Age, Endocrinology and Dismorphies.



Medicine and Surgery.

Areas: Cardiovascular

BASIC AND CLINICAL DENTISTRY RESEARCH GROUP Areas: Basic Sciences applied to Dentistry, Behavioral Dental Sciences, Clinical Dentistry, Oral Health: Epidemiology and public health.

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## **INCA- CES RESEARCH GROUP**

Areas: Biotechnology, Integral Development of Cattle Systems, Pharmacology and Therapeutic Veterinary, Physiology of Exercise in Animals, Preventive Animal Medicine and Veterinary

## CARDIO VITAL RESEARCH GROUP

### PSYCHOLOGY. HEALTH AND SOCIETY RESEARCH GROUP

Areas: Measurement and Evaluation in Psychology, Children, Adolescence and Youth, Neuropsychology and Neurodevelopment, Legal Forensic Psychology, Psychology and Collective Phenomena, Psychology and Health.

## **BIOJURIDICA STUDIES RESEARCH GROUP**

Areas: Biolaw, Bioethics, Biomedicine and Biotechnological Risk.

## HEALTH AND MOVEMENT RESEARCH GROUP

Areas: Movement Analysis, Professional Development in Physiotherapy, Disability, Clinical Intervention Model in Physiotherapy, Health Promotion and Protection Models.

## **BIOLOGY RESEARCH GROUP (CES – EIA)**

Areas: Biophysics and Physiology, Biotechnology reproduction, Bioprospecting and conservation, Genetics, Cellular and Molecular Biology.

### EPIDEMIOLOGY AND BIOSTATISTICS **RESEARCH GROUP**

Environmental and Occupational Epidemiology, Clinical Epidemiology, Genetic Epidemiology, Research methods, Evidence based practice and Population health.

## UROLOGY RESEARCH GROUP

Areas: Laparoscopy Surgery in Urology, Urinary incontinence and Neurogenic bladder, Urinary lithiasis, Endourology and Oncology urology.

## OPHTHALMOLOGIC RESEARCH GROUP

Areas: Cornea and Previous Segment, Glaucoma, Retina and Uveitis.

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#### CES CRITICAL CARE RESEARCH GROUP Areas: Critical care, nutrition.

#### SOCIAL PROTECTION OBSERVATORY **RESEARCH GROUP**

Areas: Social Protection Management, Social protection, Social Protection System, Subsystems, Coordinal and concurrent sectors and systems.

## LAPAROSCOPY SURGERY RESEARCH GROUP

Areas: Bariatric Surgery, Virtual laparoscopy surgery and Cancer laparoscopy surgery.

### POLITIC LAW RESEARCH GROUP

Areas: Administrative, Environmental, Constitutional and International Law, History of legal institutions, Thought and Society.

### HEALTH TECHNOLOGY ASSESSMENT RESEARCH GROUP

Areas: Health program performance, Evaluation of health needs, Social and economic impact of health technologies, outcomes research.

### THE CREOLE COLOMBIAN HORSE RESEARCH **GROUP** (EQUICES)

Areas: Equine medicine and surgery, equine reproduction and respiratory system.

### PROCEDURAL LAW RESEARCH GROUP

Areas: Constitutionalization of the judicial process, Alternative law, Evidentiary law, Transnational and international procedural law, Judicial function, History of procedural law.

### CORPORATE GOVERNANCE RESEARCH GROUP

Areas: Corporate epidemiology, Evidence-based management, Strategic theory.

### DAMAGE ASSESSMENT RESEARCH GROUP

Areas: Baran, Physical and biological damage, Moral damage.





described below.





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# **Extension Services**

Extension as a fundamental service of the University is considered, at CES, a community service projection that allows our students and teachers to apply their knowledge and acquire more.

CES has thus defined extension policies based on the strengths of its programs by integrating teaching and research, always seeking true academic development in accordance not only with institutional projects but also with others at a regional and national level. CES has several Centers through which it reaches out and offers its services to the communities which are



## CENDES

he Center for Health and Legal Studies -CENDES- has the objective of providing specific training in areas involving judicial principles, procedures and practice in the health sector. CENDES seeks to consolidate the existing relationship between Legal and Health Sciences by helping to improve services and developing adequate judicial practices in the collection of evidence and presentation of technical concepts.

#### Service offered by CENDES Judicial Assistance:

CES was the first official Institution in Colombia to be registered through CENDES before The Colombian Judicial Sectional Council as an Official Justice Administration Assistance Center for Expert Services (law 446 of 1998) which includes elaboration of technical and expert concepts in the following areas:

- Physical and mental health damage.
- Different aspects of public health and Social Security.
- General and specialized medical fields: respiratory therapy, cardiology, gynecology and obstetrics, EENT, psychiatry, ophthalmology, pediatrics, audiology, orthopedics, plastic surgery, dermatology, anesthesia, laboratory medicine, emergency medicine, radiology, general dentistry, periodontics, endodontics, orthodontics, and maxillofacial surgery.
- Veterinary Medicine and Zootechnics
- Psychology

#### **Consulting Services:**

CENDES offers consulting services to institutions in situations or projects related to legal and health aspects.

#### **Research**:

Research lines and projects in health and legal topics which contribute to improving its academic and technical infrastructure.



#### CEMPAS





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he CEMPAS (Center for Simulated Medical and Paramedical Training) was created in 1998 with the objective of offering simulated medical and paramedical training in order to acquire skills in the management of emergency and disaster situations. The Center offers formal and nonformal education courses to undergraduate and postgraduate students and professionals.

One of the main features that CEMPAS has is an Ambulance Simulator, which is the only one in its nature in Latin America. The Simulator is part of a Simulation Laboratory Project which envisions the construction of a simulated hospitalization ward, virtual operating room and telemedicine.

The objective of this Simulator is to develop and improve paramedical skills such as patient transportation in urban and rural settings and performance of emergency procedures on patients under difficult and unpredictable situations such as natural disasters, violent assaults or attacks.

### **Online Education Center**

 $\mathbf{S}_{\mathrm{upport}}$  Unit that helps our different Schools in the planning, design, implementation and development of formal and ongoing on-line education courses.

The On-line Education Center is a new educational alternative that has demonstrated to be of great use to reach faculty, students, alumni and the general public allowing them to maintain communication with the University and update their knowledge in situations of limited time or from long distances.



among others.



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## Consulting and Advisory Center

CES has a vast experience in the Consulting and Advisory field in assisting hospitals, health institutes, education centers and other institutions in areas related to social security, reforms, hospital management and finances, municipal health service development, hospital strategic planning, health auditing, hospital accreditation and management of health projects

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# International Affairs

 $\bigcirc$ ES has a firm commitment with the internationalization of the Institution through its Office of International Affairs with the objective of improving academic standards, increasing its international competitiveness, promoting international culture and the expansion of educational services, thus providing students and faculty with the opportunity to broaden their personal and academic perspective. The activities which the office carries out include:

## Academic Mobility

Through the Office, different academic agreements have been established with prestigious universities in the United States, Europe and Latin America that allow students to spend one semester abroad during their training.

Some of the Institutions with whom the University has established agreements and cooperation include:

#### **United States**

Universidad de Texas, en San Antonio Universidad de Miami Hospital Presbyterian, en Dallas Universidad de Baylor Universidad de Kentuckv Universidad de Vermont CORBIC - Hospital Metodista de Houston Zoológico de Baltimore Wildlife Conservation Center en Virginia Smithsonian National Zoological Park Pan American Health and Education Foundation California State University, Long Beach Robert Wood Johnson Medical School

### Canada

Universidad de Victoria Canada - CREPUQ-ASCUN Université Bishop's Université Concordia Université McGill Université Laval Université de Montréal



Universidad de Victoria École Polytechnige HEC Montréal Université de Sherbrooke Université du Québec Université du Québec à Montréal Université du Québec à Trois-Rivières École Nationale D'administration Publique Université du Québec à Chicoutimi Université du Québec à Rimouski Université du Québec en Outaouais Université du Québec en Abitibi-Témiscaminque Institut National de la Recherche Scientifique École de Technologie Supérieure Télé-université Europe Universidad de Salamanca (España) Universidad de Granada (España) Universidad de Sevilla (España) Instituto de Salud Carlos III (España) Instituto Europeo de Seguridad Social (Bélgica) Universidad Louis Pasteur (Francia) Universidad de Camerino (Italia) Universidad de Palermo (Italia) Universidad de Gotemburgo (Suecia) Latin America Universidad Nacional Autónoma de México - UNAM (México) Universidad de Buenos Aires (Argentina) Universidad de Maimónides (Argentina) QUITAR Universidad Latina de Costa Rica (Costa Rica) Universidad Peruana Cayetano Heredia (Perú) Universidad Pontificia Católica del Perú (Perú) Universidad Nacional Mayor de San Marcos (Perú) Cuerpo General de Bomberos Voluntarios del Perú (Perú) Universidad Tecnológica Israel de Quito (Ecuador) Universidad Técnica Particular de Loja (Ecuador) Universidad Católica de Santiago de Guayaguil (Ecuador) Universidad de Chile (Chile) Universidad de los Andes (Chile) Universidad de Valparaíso (Chile) Universidad de Concepción (Chile)

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Universidad de Talca (Chile) Universidad de Araraguara (Brasil) Universidad Estatal de Campiñas (Brasil) Instituto Fio Cruz (Brasil) Universidad Latina de Panamá (Panamá) Universidad INTEC. Instituto Tecnológico de Santo Domingo (República Dominicana) Colombia ICETEX - COLFUTURO - RCI

#### Internationalization at Home

In addition to the mobilization of students and faculty abroad, CES also promotes numerous activities which provide an international perspective for the academic community such as:

Inclusion of international students for formal and exchange programs Assistance to researchers in publishing articles in international journals Continuing education programs with visiting professors Promotion of a second language amongst students and faculty Cooperation with other institutions such as the Colombian Network of International Cooperation Joint work with the Alumni Office in the promotion of The CES International Alumni Network Development of international promotion strategies such as an English website and brochure and presence in international events.

#### International Culture

It is in charge of the organization and promotion of cultural activities which foster international ties, such as concerts, art exhibits and festivals with the support of embassies, consulates and international centers. Among these, one the most noted events is the organization of the Annual "From nation to nation" Program in association with the major universities in Medellin.

### Export of Educational Services

The office supports and assists the different Schools who have expanded and made CES a regional leader in the Andean Region in countries like Ecuador, El Salvador, Guatemala and the Dominican Republic where it offers programs in the public health sector, clinical medicine and clinical dentistry.

these means:

**Data base:** It is very important for CES to know about its alumni, that's why the office builds and permanently updates the data base, to maintain a close contact through regular and electronic mail.

constant updating.



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# Alumni office

he purpose is to provide an open and dynamic space for alumni from all programs, bringing them together and developing a sense of belonging towards the University, through spaces and opportunities of participation not only in the academic direction but through the promotion of activities that enhance their personal, professional, and family development.

The University recognizes in its alumni an important element because they represent CES in the professional world; it is they who generate new social and professional spaces, making it very important to motivate their active participation.

The office concentrates its efforts in maintaining permanent contact with its alumni through

Advanced Formation: the alumni constantly obtains information about every faculty regarding specializations, courses, seminars, conferences, among others, to motivate their

Alumni Bulletin: in this bulletin we inform our alumni about university news, scholarships, job openings, research awards and technology acquisitions.

# CES Library

ts mission is to support academic, research, extension and cultural university activities through the conservation, organization and diffusion of bibliographical collection and service to the university community.

### Infrastructure

CES Library is a modern 21.915,32 square feet building that blends in with the lands' topography. It has the capacity to hold close to 30 thousand volumes and 424 reading spaces, fulfilling international standards.

It offers these spaces:

Newspaper reading room Reading Room Virtual Room Music Room Movie theater Exposition and exhibition room Lounge Administration Area Photocopy Office

### Users

Library services are available to all the academic community at CES, undergraduate and graduate students, teachers, alumni, researchers, non formal course attendants, and people from institutions that have agreements with our university.

### **Bibliographic Resources**

CES library has an important bibliographical collection of books, magazines and audio visual material (DVD's, videos, slides, CDs) updates constantly.



## Services

The library creates and offers its services thinking of the needs for information, leisure and culture of all the CES community.

**Basic Services:** collection search, lending of general collections, inter-library lending.

**Specialized services:** specialized search of information, bibliographic commutation, national inter-library lending.



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Formation of users: we have three courses of introduction: library introduction, handling bibliographic resources 1, handling bibliographic resources 2.

Virtual on-line and services: Access to our data base, internet, virtual bulletin CONEXIONES, Metalibrary, and on-line reservation of CES library material.

# Department of Humanities

Aware that each day it is more urgent and necessary to create spaces where reflection about our numerous social and human problems can be made, the department of humanities offers academic formation courses, seminars, in different areas of social and human sciences, development and integral formation.

This non-formal educational services offer is in sync with the general and specific requirements of different human and entrepreneurial groups, and it can be divided in three different areas which are formed according to theses needs and punctual requirements: number of interested people, possible schedule, and different intensity of hours.

We offer the following proposals through courses, seminars and workshops with the guarantee of having significant theoretical and practical updating in topics and objects of study.

Communication and language Anthropology History Politics Sociology Philosophy Literature, art and esthetics Economics Teaching



human formation.

In this area the project has a holistic and integral perspective, taking into account the different relationships that are developed in the institution, to reach an environment of interrelation and communication with the different areas and faculties.

Socio-Cultural Area Offers different options for social interaction in spaces that assist institutional life and that give recognition to cultural manifestations that are characteristic in our social context.

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# Institutional Wellbeing

he programs of Institutional wellbeing are an option to support the personal formation of our community. Taking into account the duties that a university in Colombia should have, we offer activities for the integral formation in Cultural manifestations, exercise and sports and

### Institutional Wellbeing Areas

#### **Human Formation Area**

The programs offered from this area contribute to the development of integral formation in the human dimension of wellbeing.

#### **Institutional Support Area**

#### Leisure-Sport Area

Promotes leisure and sport related activities with free and spontaneous participation that allows enjoyment, relaxation and development, which helps creativity and contributes towards a better quality of life.

# Memberships and Affiliations

CES is a member of different academic organizations described below.

- Colombian Association of Universities -ASCUN-
- Colombian Network of International Cooperation -RCI-
- Antioquia Association of Higher Education Institutions -ASIESDA-
- Colombian Association of Medical Schools -ASCOFAME-
- International Federation of Medical Students -IFMSA
- Colombian Association of Dental Schools -ACFO-
- Colombian Network of Veterinary Medical Schools
- Association of Veterinary Medical Schools
- Colombian Association of Psychology Faculties (ASCOFAPSI)
- Colombian Association of Science Faculties (ACOFACIEN)
- Colombian Association of Physiotherapy Faculties (ASCOFAFI)

