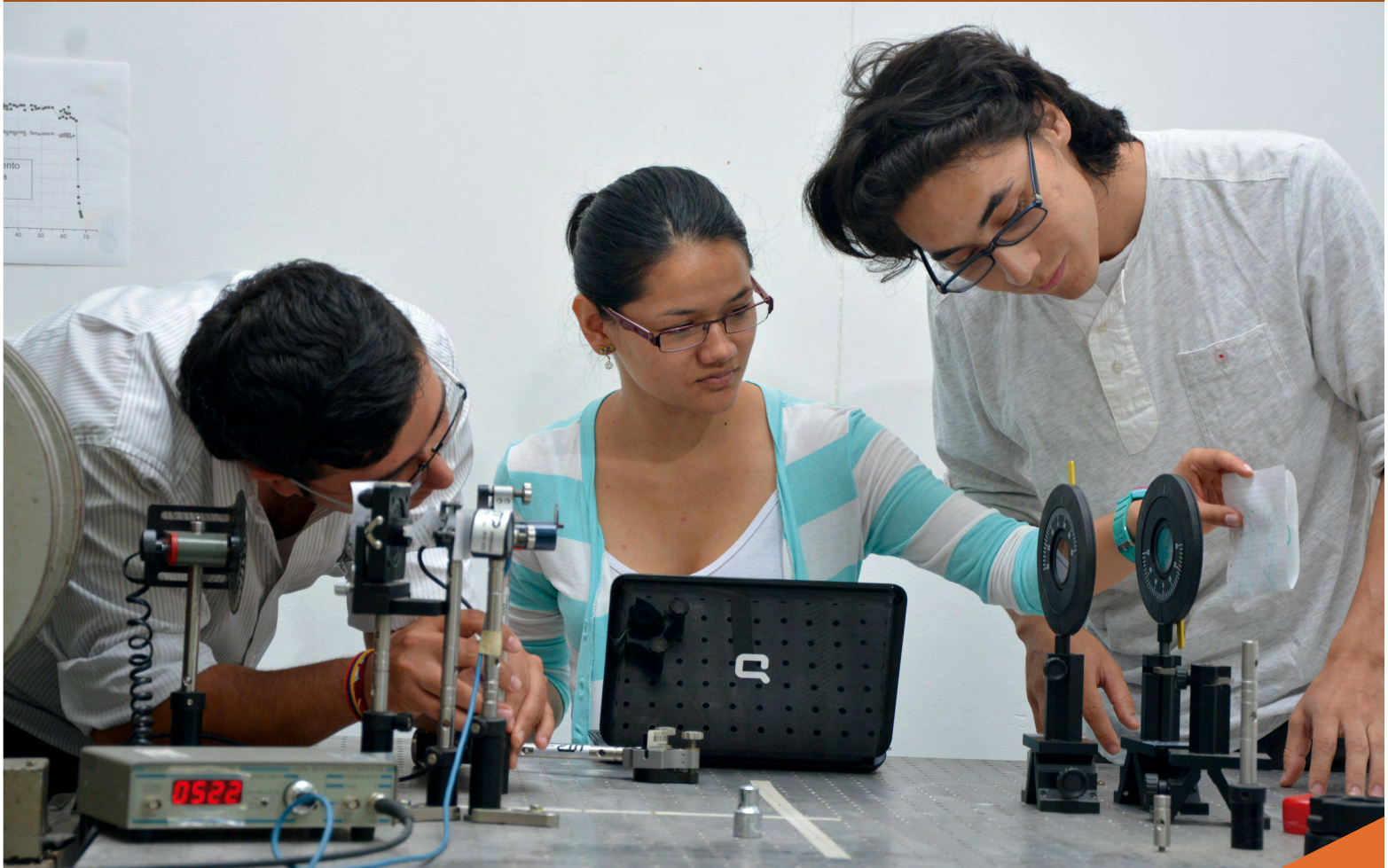


CODE SNIES: 4093

Accredited Program :
Res. N° 08054 of 17 may of 2018 validity 7 years

High Quality Certification:
Res. N° 18212 of 13 september of 2017



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Pereira - Colombia



Physics Engineering

General information

We started our academic activity in 2003 and during our trajectory we have been consolidating ourselves as one of the young programs with the greatest institutional future.

We have a highly trained teaching body, related to research groups from Colombian and foreign universities, achieving the internationalization of the teaching body.

We have specialized laboratories to provide the best learning elements to our students.

Title awarded by the program:	Engineering physicist.
Duration of the program:	10 Semesters
Working day:	Daytime
Training modality:	Professional - Face-to-face
Admission:	Semianually
Venue:	Pereira- Colombia
Código SNIES:	4093
Accredited Program :	Res. N° 08054 of 17 may of 2018 validity 7 years
High Quality Certification:	Res. N° 18212 of 13 september of 2017

About us

The program offers a unique combination of engineering, mathematics and physics and is committed to the personal and professional development of the students, always providing the necessary tools to nurture their knowledge. We stand out for serving the student as a bridge with the main research groups of the University, through which they access the different financing tools for research that the government offers.

Our goal

To train physical engineers who have a wide and exceptional understanding in different fields of knowledge, to provide answers to the requirements of society in the industrial, health, research, administration, consulting and teaching fields. Highlighting:

1. The instrumentation line with the capacity to create, design and implement technological solutions.
2. Analyze complex problems and problem-solving skills in applied physics.
3. The quantitative and conceptual understanding of the fundamental principles of physics.
4. Develop the entrepreneurial spirit and leadership for the formulation, execution and management of social impact projects.
5. The integral training of the physical engineer, as a social, professional and responsible

Our mission

To contribute to society with professionals capable of solving engineering problems focused on the creation of indigenous technology and the adaptation of important technological proposals in Colombian industry, and in particular in the region, that contribute to the growth of Colombian science and economy.

Our vision

The program will be one of the most important and recognized in the country, it will impact regionally, nationally and internationally, with professionals of excellence, who will be able to: generate micro-businesses, adapt technology and make investigation that contributes to the growth of science in our country, with ethical and responsible criteria.

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Faculty of Engineering - UTP
Physics Engineering
Building N° 1B

Applicant profile

The applicant interested in enrolling the physical engineering program is encouraged to complete the following criteria:

- High school graduated with knowledge in basic science.
- Basic capacity for reading comprehension, as well as writing and oral communication of ideas through an appropriate language.
- Capacity for logical reasoning, analysis, and synthesis of information.
- Basic knowledge of the scientific method.
- Basic computer skills.
- Basic level in English reading comprehension.
- Initiative, creativity and search for personal improvement.
- Willingness for teamwork.
- Good attitude to face personal problems, based on ethical and moral values.
- Responsibility, respect, honesty and social solidarity.
- Sense of belonging for the goods placed at their disposal (buildings, equipment, etc.).

Training profile

The training that our students receive constitutes a set of developable traits that characterize the person in their training and professional activity, integrating their knowledge, skills and aptitudes. We will provide you with a set of knowledge that has two major cycles, one of foundation and one professional, in these, you will develop basic skills so that, as a graduate, you have reasoning, synthesis and analysis.

Job profile

Our graduates effectively serve a set of activities, jobs and functions such as: management of equipment and instrumentation systems, electronic control for industry, and public and private health services. They have capacities to design, lead, carry out, evaluate and publish results in research groups, in science and technology. They provide advice to different professionals; have an excellent scientific foundation in the field of instrumentation and control, which will make you an important support in your areas of performance.

Learning outcomes

1. Identify the properties of the different materials used in the industry, and their feasible use, applying the areas of knowledge of the physical engineer.
2. Models, simulates and controls physical phenomena applying principles of statistics, data analysis and artificial intelligence for the design of applications in the productive sector.
3. Creates user interfaces and implements electronic systems for acquisition, conditioning, signal processing, and control using advanced software development environments.
4. Applies the mathematical, economic, administrative and financial concepts for company creation and for the formulation, management and execution of technology-based projects.
5. Communicates in a second language, ideas and results of experiments and investigations of physical phenomena for knowledge and application by the academic, scientific, industrial community and society in general.
6. Problem-solving skills of theoretical and applied physics autonomously through individual and collaborative work, recognizing the need for permanent updating and academic training throughout the life.
7. It evidences the role of the physical engineer in society assuming behaviors and attitudes in accordance with the constitution and the law, as a comprehensive professional, with critical thinking, ethical behavior and a sense of belonging, promoting the protection and defense of the environment in their professional activity.
8. Applies bioengineering supported by the scientific method based on the physicochemical foundations of the physiology of the human body, making use of biological sciences, biophysics, signal processing, data analytics and understanding of the operating principles of the biomedical technology in order to support the health sector.
9. Supports the generation of new knowledge processes in academic environments, or the solution of problems in the productive sector, applying the acquired knowledge in theoretical and applied physics, with scientific rigor, and ethical values.

What do you need to belong to the program?

Being a person with high affinity for technology and for the search for solutions to problems in your environment, being curious to know the principle of how what surrounds you works. You must be a creative, innovative person, willing to make enough academic, intellectual and personal effort so that you can train at the highest possible professional level that allows you a creative approach to the problems of the environment.



Physics Engineering

Curriculum

SEMESTER	SUBJECT	CA
1º Semester	Investigation methodology	2
	Humanities I	2
	Sports I	1
	Calculus I	5
	Introduction to Engineering physics	2
	Drawing I	2
	General chemistry	3
2º Semester	Humanities II	2
	Sports II	1
	Calculus II	5
	Linear Algebra	3
	Physics I	4
Physics Laboratory I	2	
3º Semester	Writing and oral communication	2
	Calculus III	4
	Computer programming	3
	Physics II	4
	Physics Laboratory II	2
Biology	2	
4º Semester	Calculus IV	2
	Numerical methods	3
	Physics III	2
	Physics Laboratory III	2
	General electronics	3
	General electronics laboratory	3
Statistics	2	
5º Semester	Mathematical methods for physics	5
	Fluid mechanics	3
	Linear electronics	3
	Linear electronics laboratory	2
	Thermodynamics	3
	Computer programming II	3

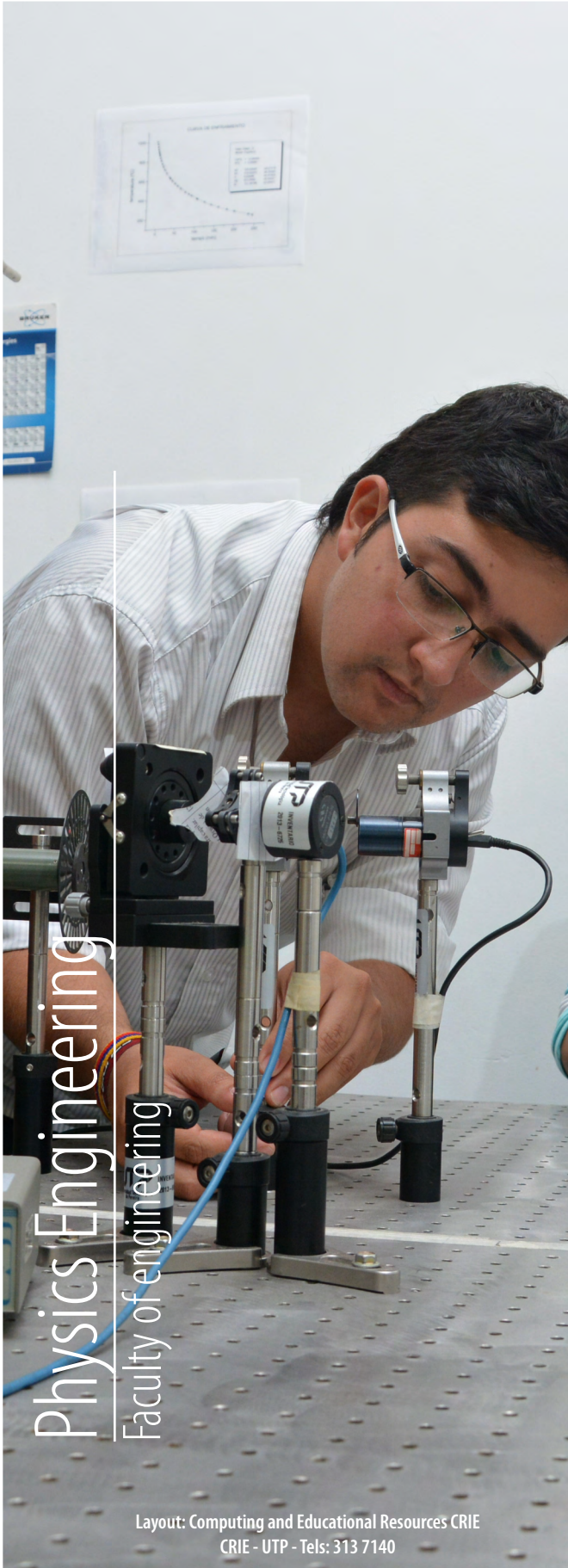
SEMESTRE	ASIGNATURA	CA
6º Semester	Biophysics	3
	Classical mechanics	3
	Digital electronics I	3
	Digital electronics laboratory I	2
	Biophysics laboratory	2
	Materials science and engineering	3
	Metrology	3
7º Semester	Modern physics	3
	Electromagnetism	3
	Control theory	4
	Modern physics laboratory	1
	Elective I	6
8º Semester	Quantum mechanics	3
	Optics	3
	Real-time and digital signal programming	3
	Economical engineering	3
	Elective II	6
9º Semester	Elective III	6
	Thesis I	3
	Statistical mechanics	3
	Solid state physics	3
	Physics of transducers	3
	Physics of transducer laboratory	1
10º Semester	Thesis II	6
	Ethic	1
	Administration	3
	Political constitution	2

CA Academic credit

Number of subjects: 59 / Number of credits: 175

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Physics Engineering

Faculty of engineering

Layout: Computing and Educational Resources CRIE
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For more information about the program

Physics engineering
Faculty of engineering - UTP
Build N° 1B Office 1B-148

Web: ingenierias.utp.edu.co/ingenieria-fisica/

Email: jjSanta@utp.edu.co

Tel: (57) (6) 313 7147

Registration

www.utp.edu.co/inscripciones/



Admissions, Registration and Academic Record's Office - Building 3 – UTP

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Tel: (57) (6) 313 71 39 - Switchboard (57) (6) 313 73 00

Exts: 7176 - 7177 - 7178 - 7179 - 7182 - 7183

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