UTP | Universidad Tecnológica de Pereira

Faculty of Engineering

Computer Systems Engineering

SNIES CODE: 269

Qualified registration:
Res. 29805- Dec 29th, 2017 / Duration 7 years

High quality accredited program:
Res. 16316 – Aug 19th, 2016 / Duration 4 years

Delve into the world of technology and computer programming

Study the development of automated systems and the use of programming languages
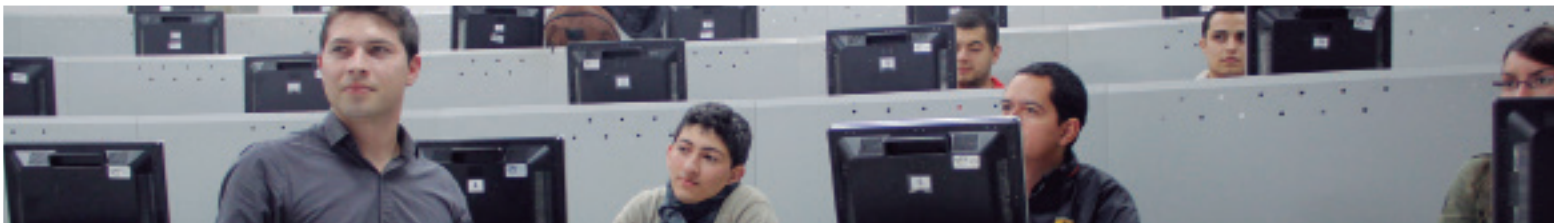
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Pereira - Colombia

Computer Systems Engineering

General information

The Computer Systems Engineering program of Universidad Tecnológica de Pereira was created in 1991 as part of the Basic Sciences Faculty, with the general aim of "training professionals with solid knowledge and research skills in different areas of development in Systems and computing sciences". Currently, the program is attached to the Faculty of Engineering, and the training process is connected to the following postgraduate programs:

- Specialization in Data Networks.
- Specialization in Digital Electronics.
- Master's in computer systems engineering.

Academic name: Computer Systems Engineering
Duration: 10 semesters
Studying schedule: Daytime
Modality: Undergraduate - In-person training
admission: biannual
SNIES code: 269
Qualified registration: Res. 29805 / Dec 29th, 2017 duration 7 years
High quality accredited program: Res. 16316 / Aug 19th, 2016 duration 4 years

Nuestros objetivos

- Provide solid training in the principles and methods in Software Engineering to solve problems of different disciplines.
- Promote scientific research to create innovative solutions based on Computer Science and Information and Communication Technologies, according to the needs and problems of the global environment.
- Educate comprehensive professionals with ethical, moral, and democratic principles committed to sustainable development.
- Develop our students' necessary skills such as teamwork, self-learning, logical reasoning, critical thinking, and communication, crucial for the global context.
- Promote the training of professionals with skills to solve problems by assuming challenges and commitments related to their performance as an engineer in national or international companies.

Vision

Becoming a leader program in the national academic context, in which graduates commit to technological advances, research, quality, ethics, social responsibility, and environmental sustainability.

Mission

ISC-UTP is an undergraduate program that prioritizes comprehensive education based on professional ethics, commitment to the environment, acquisition of a second language, and taking advantage of the opportunities offered by the Institution, where the student develops skills in Engineering, Information Systems, and Computer Science based on entrepreneurship and innovation, and conceiving research as the foundation to propose high-quality technological solutions to social problems.

Candidate profile

The candidate must have with high sensitivity or love for technology, mainly in the computing area; he must have basic training to start the professional cycle as an engineer and possess skills to make logical reasoning and inference in analyzing situations. It is recommended that he has basic English knowledge.

Universidad Tecnológica de Pereira
Reacreditada como Institución de Alta Calidad
por el Ministerio de Educación Nacional
2013 - 2021

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Graduate Professional Profile

The Computer Systems Engineering program of Universidad Tecnológica de Pereira can perform tasks that involve the whole software development life cycle that includes analysis, design, development, commissioning, and maintenance of the information systems that constitute the technological structure that supports companies in the area of software engineering, taking into account the environmental impact of the use of technology and guaranteeing the security of the information that the organization requires for its vital operation.

The graduate is trained to participate with multidisciplinary teams in the development of technological solutions that organizations require, as well as to participate in the construction of models and intelligent tools to improve processes, researching in the technological context and continuing their training for life through autonomous learning and/or postgraduate studies, respecting laws, and the environment.

Graduate Occupational Profile

Throughout his professional practice, the Computer Systems Engineer strengthens the skills that allow him to perform as a technology manager, software analyst, information and database systems administrator, developer of software, software architect, software maintenance and support engineer, technology advisor or director, a researcher in information technology projects, and professor of information technology, among others. The following are business sectors in which the Computer Systems Engineer of Universidad Tecnológica de Pereira can perform professionally:

- Public sector companies.
- Industrial companies: where products and processes must be modeled from computer systems.
- Advisory and consulting companies: in areas of information technology.
- Technology Companies: especially software development, serving as a manager or entrepreneur, and, as a software development engineer.
- Institutions of higher education or research centers. As a teacher and / or researcher.
- Perform as an efficient and responsible professional that generates progress and wealth in both the business and national spheres.

Universidad Tecnológica de Pereira
Certificada en: Gestión de Calidad ISO 9001:2008
Gestión Pública NTC GP 1000:2009

Computer Systems Engineering

Syllabus - On-site Modality - Daytime

SEMESTER	COURSE	AC
1st Semester	Mathematics I	5
	Sports I	1
	Computing introduction	3
	Development of logic thinking	2
	Humanities I	2
	Programming I	5
2nd Semester	Mathematics II	5
	physics I	4
	Physics laboratory I	2
	Sports II	1
	Linear algebra	3
	Programming II	4
3rd Semester	Logic	3
	Humanities II	2
	Physics II	4
	Physics laboratory II	2
	Data structure	4
	Mathematics III	4
4th Semester	Programming III	3
	Physics laboratory III	2
	Mathematics IV	3
	Physics III	4
	Systems Theory	2
	Electronics laboratory	2
	Electronics fundaments	3
5th Semester	Business Administration	3
	Digital electronics	3
	Programming IV	3
	Statistics	2
	Digital electronics laboratory	2
	Grammar and formal languages	4

AC Academic Credit

SEMESTER	COURSE	AC
6th Semester	Database I	4
	Operation research	3
	Oral and written communication techniques	2
	Special statistics	2
	Computer architecture	4
	Graphics computation	3
7th Semester	Communications I	3
	Software engineering I	4
	Operating systems I	4
	Compilers	3
	Artificial intelligence	3
8th Semester	Software engineering II	4
	Project management	3
	Ethical and recruitment legislation	2
	Soft computing	4
	Communications II	3
	Distributed systems	3
9th Semester	Client/Server Architecture	4
	Elective A1	6
	Software Project management	3
	Graduation project I	2
	Software laboratory	3
10th Semester	Constitution	1
	Systems audit	3
	Graduation project II	6
	Entrepreneurship	3
	Elective A2	6

Total courses: 57 / Total academic credits: 183

Research groups linked to the program

- RESEARCH GROUP SIRIUS
- RESEARCH GROUP IN TELECOMMUNICATIONS - NYQUIST
- RESEARCH GROUP IN COMPUTING
- RESEARCH GROUP IN ARTIFICIAL INTELLIGENCE - GIA
- RESEARCH GROUP STEPHEN HAWKING
- RESEARCH GROUP IN SOFTWARE DEVELOPMENT - GRANDE

Computer Systems Engineering
Faculty of Engineering

Disegn: Recursos Informáticos y Educativos CRIE - UTP
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More program reports

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Enrollments

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