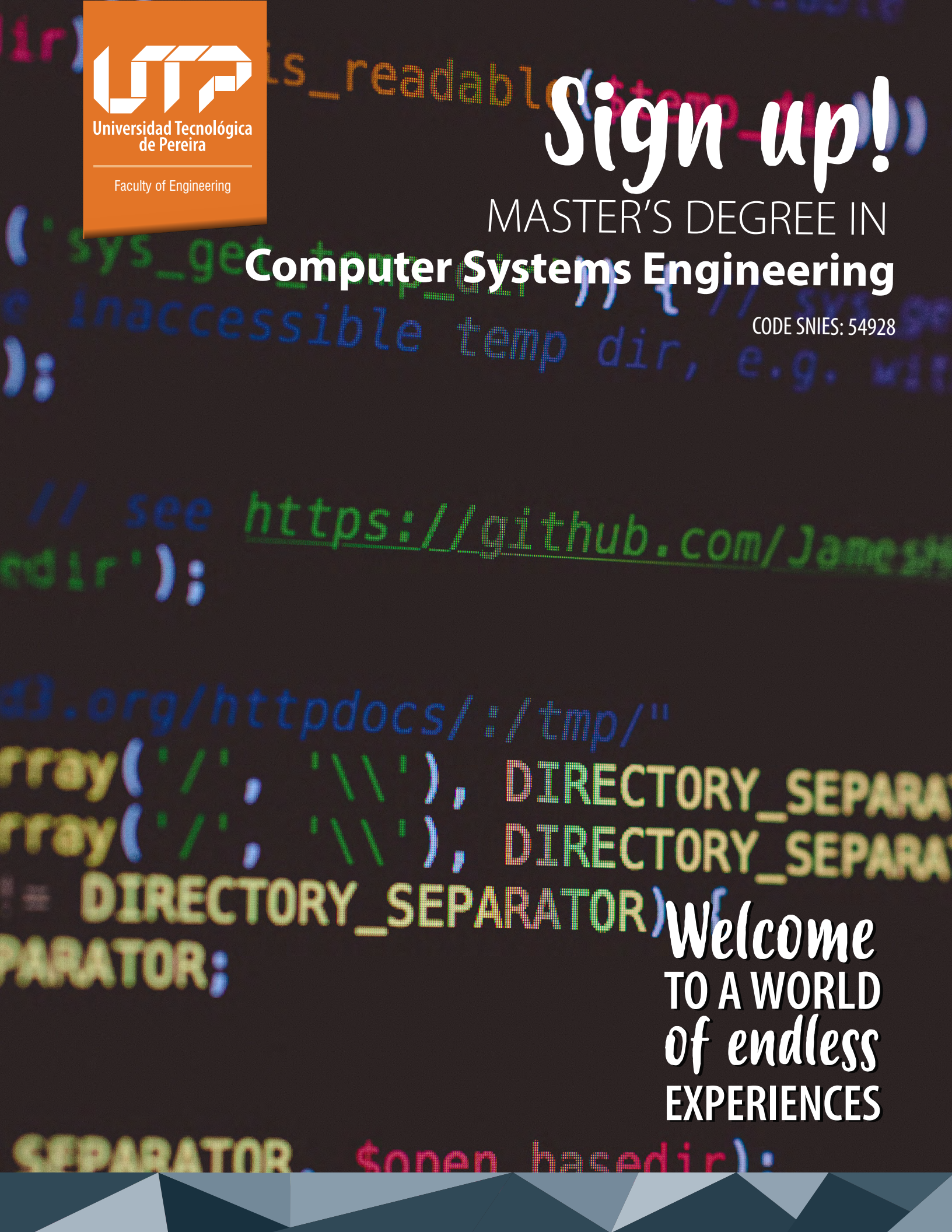

Universidad Tecnológica de Pereira

Faculty of Engineering

Sign up!

MASTER'S DEGREE IN

Computer Systems Engineering

CODE SNIES: 54928

Welcome
TO A WORLD
of endless
EXPERIENCES

Learn **about the** high capacities **of research** in Computer **Systems** Engineering

-Graduate program created by the Agreement No. 40 issued by the Honorable Superior Council of Universidad Tecnológica de Pereira

Our Master's Degree in Computer Systems Engineering is based on the critical and analytical reflection of the regional and national context, it is consistent with the socio-economic situation where the program takes direct action, the addressed government policies, the world trends and the new technologies applied in the teaching-learning process.

This program began in 2009, with outstanding results in Risaralda; we have trained great professionals that generated a positive impact in the region and it has also created extension projects

CODE SNIES: 54928

OFFICIAL REGISTRATION:
Resolution N° 08435 / April 28, 2016.

Master's Degree in
Computer Systems Engineering

4 Semesters

Schedule
Mixed

Number of credits
58

Admisión
Semi-annual

8.2 SMMLV (Minimum Monthly Legal Wage in Colombian Pesos)

Program Objectives

The general objectives of the program, listed below, are the fundamental axes, to achieve the purposes of comprehensive training of the master's student:

A. Encourage the use of Computer Science and engineering knowledge to solve problems according to their complexity.
B. Develop skills for the design, implementation, implantation and socialization of relevant and adaptable projects to the environment, supported by Computer Science; taking into account economic, social and environmental aspects.
C. Strengthen scientific research skills to solve problems according to their complexity, articulated with global challenges.
D. Encourage ethical behaviour with integrity and responsibility, promoting equity and diversity, in individual and group settings.

Our Mission

The Master's program in Computer and System Engineering at the Technological University of Pereira is conceived as a training space for innovation and pure and applied research supported by Computer Science, with a clear purpose of the development of our society, but always contributing to the preservation of the environment, all framed within the guidelines of the PDI, and articulated with educational centers, research groups attached to the program, national and international research centers and always supported by professors and tutors of the highest academic level.

Our Vision

The Master's program in Computer and System Engineering at the Technological University of Pereira wants to be recognized as a high quality program, both nationally and internationally, a leader in research, knowledge generation, transversality in solving problems supported by Computer Science, and in the dissemination of scientific knowledge, in a period not exceeding five years, all this through the training of qualified professionals in the service of society and who contribute to the socio-economic development of it, with the highest ethical values and with a high commitment to preserving the environment.

Learning Outcomes

- **Generic Competences**

1. Formulate, structure and manage projects and products of Computer Science, to satisfy the needs and expectations of a global and changing environment, taking into account economic, social, environmental, political and cultural aspects.
2. Assertively conclude and communicate research results in the field of Computer Science, clearly and unambiguously, even in a foreign language.
3. Possess interpersonal skills to function efficiently in individual or group settings, and to adapt to changes with initiative and authority.
4. Demonstrate and apply principles of professional and personal ethics in proposing engineering solutions through Computer Science.
5. Argue for justified ethical and professional decision making, understanding the impact of engineering solutions in a global, economic, environmental and social context.
6. Achieve skills in autonomous learning and critical thinking, which will allow to permanently update their professional knowledge, to respond to the pressures and changes of the global world.

- **Professional competences**

1. Apply the knowledge acquired in the program, from an interdisciplinary perspective, critical and responsible with society, to study engineering problems according to their complexity, using Computer Science.
2. Examine, identify and propose solutions to complex engineering analysis problems, in the field of Computer Science, using advanced knowledge of modern analytical methods.
3. Design and create solutions to complex engineering problems, appropriate in one or more domains of Computer Science, that positively impact ethical, social, legal, economic and environmental aspects of the environment
4. Use pure and / or applied scientific research in problem solving in the field of Computer Science, including advanced knowledge of data analysis and interpretation.
5. Create, select and apply new techniques, methods, resources and advanced tools of Computer Science, to solve complex problems in the environment taking into account its risks and restrictions.
6. Describe, explain, pose and solve problematic situations of the public and private organizational ecosystem, using Computer Science.

Graduate Profile

The MISC graduate will have all the necessary and sufficient competencies to:

a) Develop and apply proposals that promote research and technological innovation based on ICTs.
b) Develop models that allow the solution of highly complex computational problems.
c) Consider economic, environmental, regulatory, economic, ethical and social aspects in the solution of different problems in the engineering area.
d) Have critical thinking that allows you to formulate judgments for decision making.
e) Recognize the ethical and scientific rigor of research.
f) Recognize the interdisciplinarity of knowledge as a source for research

What you need to join to the program

Our Master's program is intended for professionals in the field of Engineering, especially Systems, Computer, Software, Electrical, Electronic, Mechatronic, Industrial, Physics, Mathematics and related careers, who wish to expand their curriculum experience in areas such as Artificial Intelligence with emphasis in Data Analytics and Optimization, Software Engineering with emphasis on Software Architectures and Requirements Engineering, High Performance Computing, and Data and Communications Networks.

The applicant for a Master's degree in Computer and Systems Engineering must preferably hold a degree in engineering of: Systems, Electronics, Telecommunications, Electrical, Physics or related engineering, issued by a national higher education center, or its foreign equivalent, legally recognized. The admission of professionals from areas other than the above will be studied by the curricular committee, as long as they prove knowledge and / or developments in the area.

Professors

We have a highly qualified group of professors with great academic excellence, which guarantees the quality of our program. To know more about our teaching staff, visit our web page: **https://ingenierias.utp.edu.co/maestrias/ingenieria-ensistemas-y-computacion/inicio.html**

SYLLABUS

Introduction -Integration

THE MASTER'S IN SYSTEM AND COMPUTATION INGENEERING
Ethics – Industry 4.0 – Research groups presentations - Research – Notorious graduates

Semester	Course	Number of credits
1	Mathematics for Computer Science I	4
	Computational Complexity	4
	Elective I	4
	Research Seminar I	3
2	Mathematics for Computer Science II	4
	Computational Models	4
	Elective II	4
	Research Seminar II	3
3	Elective III	4
	Elective IV	4
	Seminar I	2
	Graduation Project I	4
4	Elective V	4
	Elective VI	4
	Seminar II	2
	Graduation Project II	4
	TOTAL	**58**

Graduation project idea

Formalization of the project idea

Presentation on of project proposal

Preliminary graduation project

Graduation Project

Master's degree in Computer Systems Engineering

Master's Degree in Computer Systems Engineering

Official Registration 08435 / April 28 of 2016 / SNIES CODE 54928

Click HERE

Sign up NOW!

For more information about the program

Faculty of Engineering - UTP
Building Nº 15 Office number 15C - 104
Adress: Cra. 27 10-01 Los Álamos - Pereira-Risaralda-Colombia
Program's web page: https://ingenierias.utp.edu.co/maestrias/ingenieria-en-sistemas-y-computacion/inicio.html
Email: misc@utp.edu.co
Contact us: (57) (6)313 7489

Registration

Admissions, Registration and Academic Record's Office - Building 3 – UTP
Email: inscripcion@utp.edu.co
Tel: (57) (6) 313 71 39 - **Switchboard** (57) (6) 313 73 00
Exts: 7176 - 7177 - 7178 - 7179 - 7182 - 7183
UTP Adress: Cra. 27 Nº 10 - 02 Los Álamos - Pereira - Risaralda -Colombia

www.utp.edu.co/inscripciones/

Universidad Tecnológica de Pereira

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Resolution 12220 of 2016

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Tels: (57) (6) 321 0029 - 313 7405

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