Computer Networks

Course Description

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Lecturer
Computer Engineer
School of Engineering
Universidad Distrital Francisco José de Caldas

2024-I

Outline

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Academic Experience

- **Computer Engineer**, M.Sc. in Computer Engineering, *researcher* for 15 years.
- 7 years as **full-time associate professor** at colleges, for Computer Engineering programs.
- 3 years as **lecturer professor** for both colleges and goverment STEM programs.
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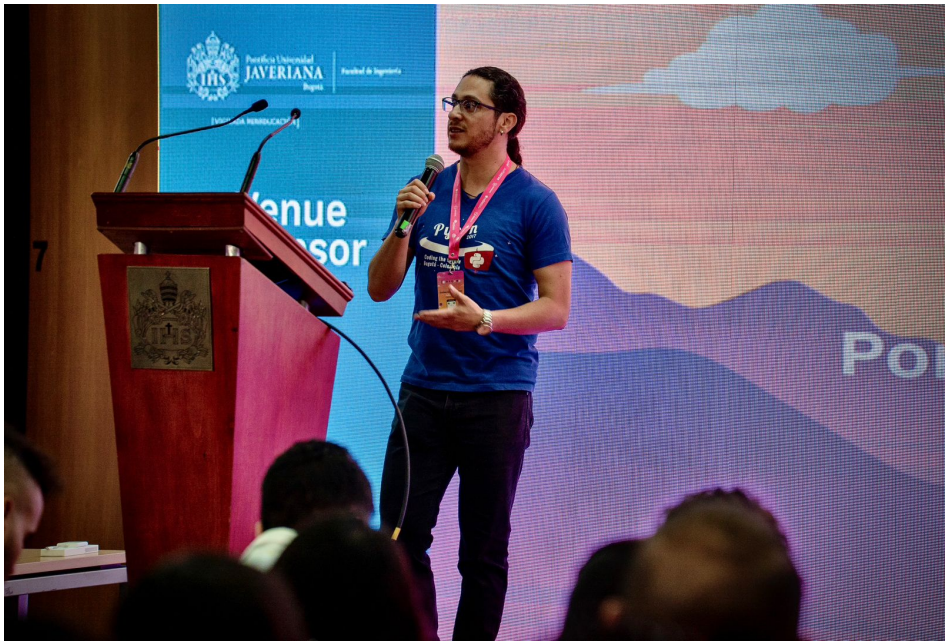

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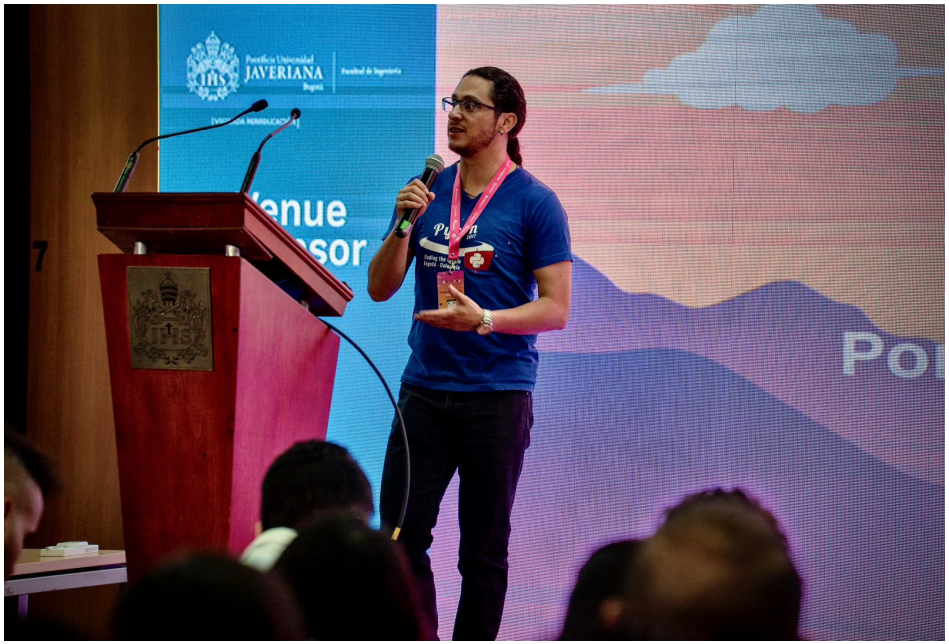

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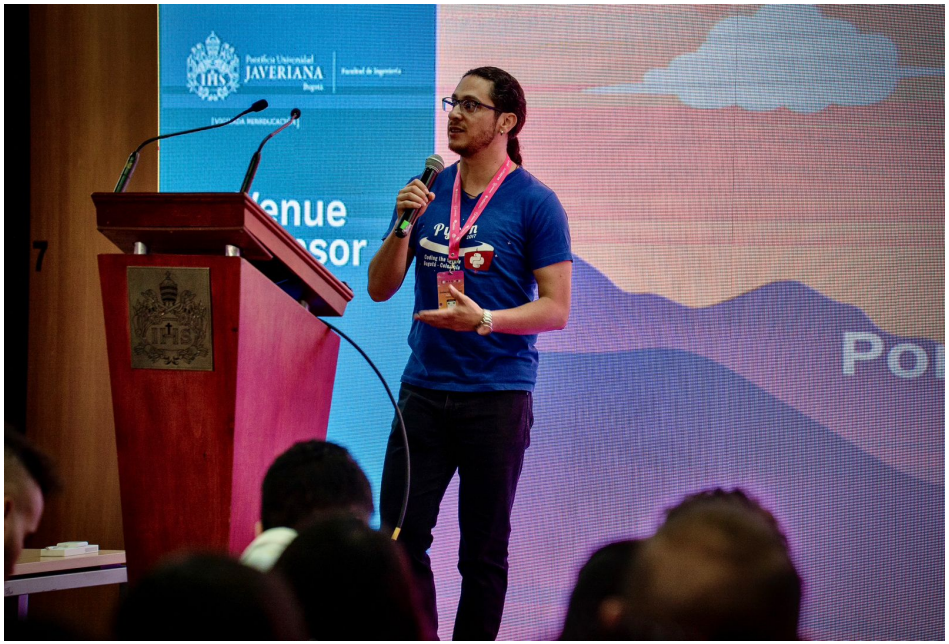

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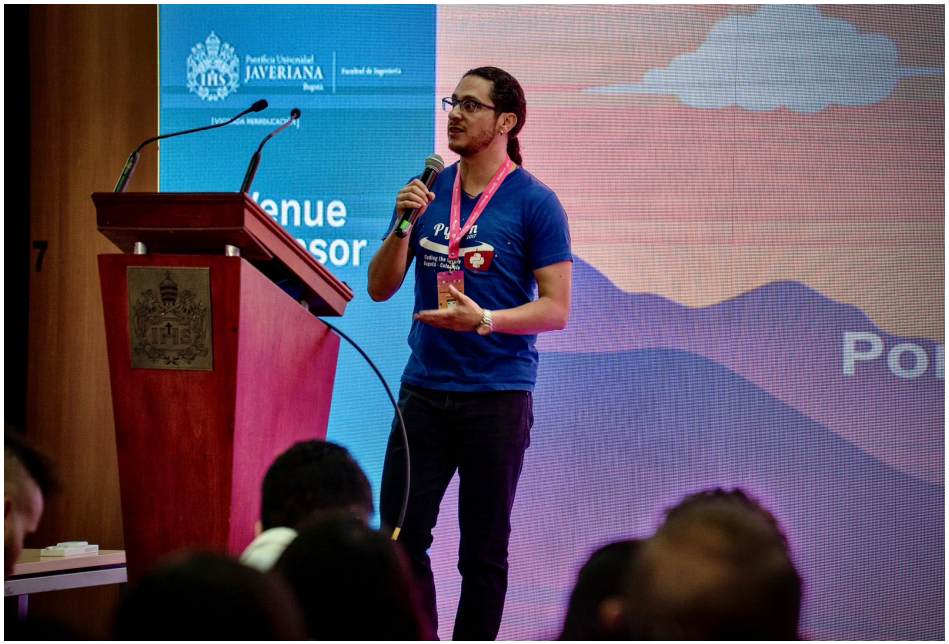

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Overview

This course is designed to introduce undergraduate students to foundations of **computer networks** and *recommendatios* of computer networks design. Also, in this course some **advanced** topics will be covered, such as cloud infrastructure, and **IoT** networks.

Classes will consist of lectures, **discussions**, practical examples, and workshops. Also, you must take some readings from *computer network architectures*. In addition, there will be a **semester-long project**, as well **three** exams, **four** workshops, and **twenty** additional assignmens.

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Goals

The main goal of this course is to provide undergraduate students with different **models**, **concepts**, and **tools** to understand the foundations involved in interconnecting devices for communications. It includes the explorations of *protocols*, *network hardware*, and *network services*.

At the end of this course you should be able to **design** a simple but functional **network solution** with a good level of **quality** metrics. Also, you should be able to **think** in computer network systems in both **on-premise** and **cloud** way.

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Prerequisites

This is a basic course, so you must have some knowledge in:

- **Programming** in Python or C++.
- **Command-line** interface foundations.
- **Git** basic usage, and **GitHub** basic usage.
- Use of **IDEs** like VS Code, Eclipse, or PyCharm.

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Syllabus I

Period	Topic	Time
Period I	Introduction to Computer Networks	3 classes
	Foundations of Computer Networks	3 classes
	Workshop of Network Architecture	1 session
	Computer Networks	4 classes
	Workshop Network Segmentation	1 session
	Test 1	1 session
Period II	Networking Devices	2 classes
	Networks Layers	4 classes
	Workshop on Network Topologies	1 session
	Test 2	1 session

Table: Schedule for Period I & II

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Syllabus II

Period	Topic	Time
Period III	Networks Services	3 classes
	Workshop on Nteworks Services	1 session
	Computer Networks Tendencies	2 classes
	Questions and Answers	2 classes
	Final Test	1 session
	Projects Presentation	1 session

Table: Schedule for Period III

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Grades Percentages

Period	Item	Percentage
Period I	Assignments	10%
	Workshops	15%
	Test	10%
Period II	Assignments	10%
	Workshops	15%
	Test	10%
Period III	Workshop + Assigntments	5%
	Final Test	10%
	Course Project	15%

Table: Software Modeling Grades Distribution

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Don't hate the player, hate the game

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- Class attendance is **not mandatory**. If you **miss** classes, you must *study by yourself*.
- No cell-phones, no smartwatches, no whatsapp, no tinder, no smartanything. **Just you and your brain**. Pay attention at clase.
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Code of Conduct

- Always be **respectful** to your classmates and to me. You must be **kind** with everyone inside (*and outside*) the classroom.
- There is no a better programming language, tool, or technology. There are only **better** or **worse** solutions.
- You must be **honest** with your work. If you don't know something, just **ask** me. I will be glad to help you.
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Bibliography

Recommened bibliography:

- **Computer Networks: A Systems Approach**, by Larry L. Peterson, Bruce S. Davie.
- **Redes de Ordenadores, un enfoque descendente basado en Internet**, by J.F. Kurose, K.W. Ross.
- **Comunicaciones y redes de computadores**, by William Stallings.
- **Redes e internet de alta Velocidad**, by William Stallings.

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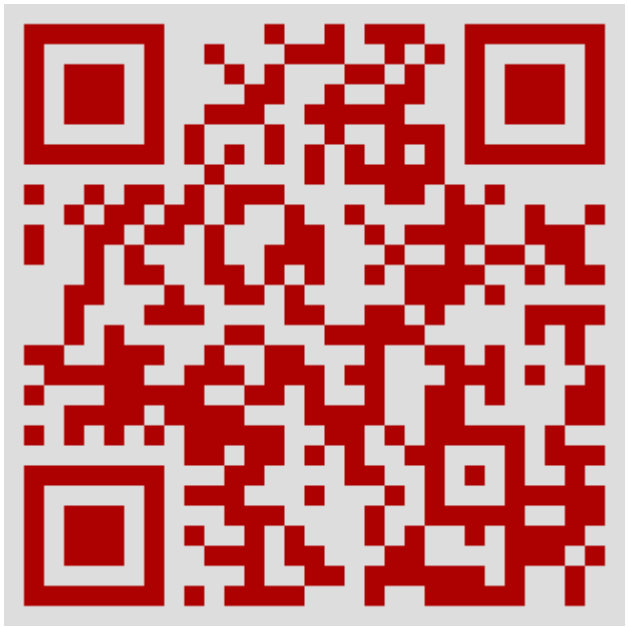

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