

COURSE DESCRIPTION

Computer Science III

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

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UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS

Outline

- 1 You Don't Know Who I Am
- 2 Course Overview
- 3 Syllabus
- 4 Grading & Rules
- 5 Bibliography



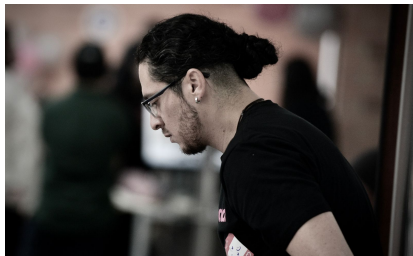
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Academic Experience

- **Computer Engineer, MSc.** in Computer Engineering, and *researcher* for the past **15 years**.
- 7 years as a **full-time associate professor** at various colleges for **Computer Engineering programs**.
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Non-academic Experience



- **Co-organizer** of **PyCon Colombia** and **Python Bogotá**; collaborated with *ScipyLATAM* and *Jupyter LATAM*.
- +3 years working as a **Software Engineer** for several tech companies in Colombia.
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Overview

This course is designed to **introduce undergraduate students** to **foundations** of **compilers design**. It is hard to generate a new **programming language** without a **good compiler**.

Classes will consist of **lectures**, **discussions**, and **practical examples**. Also, you must take some readings from theory of the computation. In addition, there will be a **semester-long project**, as well **one final test**, and **three workshops**.



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Goals

The **main goal** of this course is to **cover** the main concepts associated with **compilers design**. Also, you will learn how to **create** a **simple compiler** for a **simple programming language**.

By the end of this course you should be able to **create** a **simple compiler** for a simple programming language, where the output is a graphical representation of the program rather than machine code.



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Prerequisites

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

- **Programming** in [Java](#), [Python](#), or [C++](#).
- **Object-Oriented Programming** [fundamentals](#).
- Basic concepts of **Data structures** and [algorithms](#).

Also, it is desirable to have some knowledge of:

- Basic usage of [Git](#) and [GitHub](#).
- Using IDEs such as [VS Code](#), [Eclipse](#), or [PyCharm](#).



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Syllabus I

Period	Topic	Time
Period I	Introduction to Programming Languages	3 sessions
	Workshop on Theory of the Computation	1 session
	Compilers	1 session
	Lexical Analyzers	1 sessions
	Workshop on Lexical Analyzers	1 session
	Course Project Catch-Up	1 session

Table: Schedule for Period I



Syllabus II

Period	Topic	Time
Period II	Synthetic Analyzer & Parsing	1 session
	Semantic Analyzer	2 sessions
	Workshop on Compilation Analyzers	1 session
	Translation Process & Correctness	2 sessions
	Advanced Topics	1 session
	Final Test	1 session
Period III	Projects Presentation	2 session

Table: Schedule for Period II & III



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Grades Percentages

Period	Item	Percentage
Period I	Workshops	60%
	Project Catch-Up	40%
Period II	Workshop	50%
	Test	50%
Period III	Paper + Poster	5%
	Project Implementation	10%
	Project Report	15%

Table: Computer Science III Grades Distribution



Don't hate the player, hate the game

- All assignments must be submitted on **time** and in **english**. Grammar and spelling will **not** be evaluated.
- Copying and pasting from internet is **forbidden**. Please, **develop** your own solutions.
- 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.
- You must be **responsible** with your work. If you don't submit **on time**, please **don't cry**.
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Bibliography

Recommended bibliography:

- [Compilers: Principles, Techniques, and Tools](#), by Aho, Lam, Sethi, and Ullman.
- [Engineering a Compiler](#), by Cooper and Torczon.
- [Modern Compiler Implementation in Java](#), by Andrew W. Appel.
- [Programming Language Pragmatics](#), by Michael L. Scott.
- [The Art of Compiler Design: Theory and Practice](#), by Thomas Pittman.
- [The Dragon Book](#), by Aho, Lam, Sethi, and Ullman.
- [The Theory of Parsing, Translation, and Compiling](#), by Alfred V. Aho.
- [Notas de Clase, Teoría de la Computación](#), by Rodrigo de Castro Korgi.



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Thanks!

Questions?



URL: www.linkedin.com/in/casierrav

