

SYSTEMS ANALYSIS

Course Description

Author: Eng. Carlos Andrés Sierra, M.Sc.
carlos.andres.sierra.v@gmail.com

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

2024-I



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



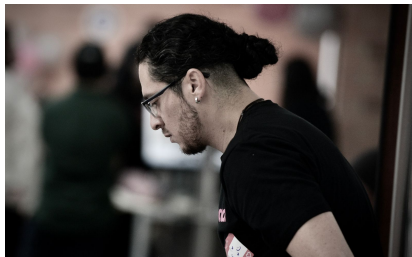
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Academic Experience

- **Computer Engineer**, 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 government STEM programs.
- **Speaker** in Colombia, Brasil, Bolivia, at *IEEE* events and colleges.



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Non-academic Experience



- PyCon Colombia and Python Bogotá **co-organizer**. Collaborations in ScipyLATAM and Jupyter LATAM.
- 3 years as **software engineer** for several companies in Colombia.
- 3 years as **Technical Leader** of Machine Learning and Data Science in a USA startup.
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Overview

This course is designed to introduce undergraduate students to foundations of **systems analysis** and a lot of multiple science paradigms. This is a course focused on thinking, and **problem solving**.

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



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Goals

The main goal of this course is to provide undergraduate students with different **models concepts**, and **tools** for understanding and solving problems using **analysis systems** based on projects requirements.

At the end of this course you should be able to **create** a full **engineering solution** with a good level of **quality** metrics. Also, you should be able to **design** solutions in an **agnostic** way.



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Prerequisites

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

- **Programming** in Python or C++.
- Draw diagrams to represent anything.
- 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	Systems Thinking	3 classes
	Information and Communication	2 classes
	Workshop on Entrophy	1 session
	Swarm Intelligences	1 class
	Workshop on Swarm Intelligence	1 session
	Processes and Software	3 classes
	Test 1	1 session

Table: Schedule for Period I & II



Syllabus II

Period	Topic	Time
Period II	Analyst as Role	2 classes
	Systems Design	1 class
	Workshop on Systems Design	1 session
	Systems Design	1 class
	Business Systems	4 classes
	Workshop on Project Management	1 session
Period III	Test 2	1 session
	Ethical Data Science	1 class
	Simulation	1 class
	Knowledge Representation	2 classes
	Workshop on Graph Knowledge	1 session
	Final Test	1 session

Table: Schedule for Period II & 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 + Assignments	5%
	Final Test	10%
	Course Project	15%

Table: Software Modeling Grades Distribution



Don't hate the player, hate the game

- All assignments must be submitted hand-written 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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Recommended bibliography:

- **Systems Analysis and Design**, by Alan Dennis, Barbara Haley Wixom, and Roberta M. Roth.
- **Systems Analysis and Design**, by Kenneth E. Kendall and Julie E. Kendall.
- **Systems Analysis and Design**, by Scott Tilley and Harry J. Rosenblatt.
- **Systems Analysis and Design**, by Gary B. Shelly, Harry J. Rosenblatt, and Thomas J. Cashman.



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Thanks!

Questions?



www.linkedin.com/in/casierrav

