

SYSTEMS ANALYSIS

Course Description

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Computer Engineer
School of Engineering
Universidad Distrital Francisco José de Caldas

2024-III



Outline

- 1 You don't know who I am
- 2 Course Overview
- 3 Syllabus
- 4 Grading & Rules
- 5 Bibliography



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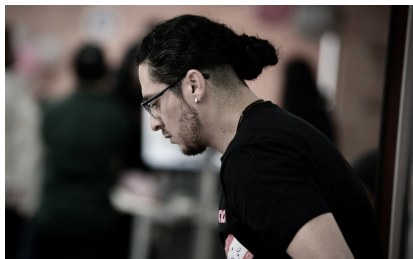
Academic Experience

- **Computer Engineer**, M.Sc. in Computer Engineering, and 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 **tech 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 systems*. In addition, there will be a **semester-long project**, as well **two exams**, **four workshops**, and **ten additional assignments**.



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English - Handwritten



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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Llama → LLaMA



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 | 4 sessions |
| | Information and Communication | 2 sessions |
| | Workshop on Entrophy | 1 session |
| | Analyst as Role | 2 sessions |
| | Swarm Intelligences | 2 sessions |
| | Simulation | 2 sessions |
| | Workshop on Swarm Intelligence | 1 session |
| | Test 1 | 1 session |

Table: Schedule for Period I



Syllabus II

| Period | Topic | Time |
|------------|----------------------------|------------|
| Period II | Processes and Software | 3 sessions |
| | Systems Design | 3 sessions |
| | Workshop on Systems Design | 1 session |
| | Business Systems | 4 sessions |
| | Ethical Data Science | 1 session |
| | Workshop on Expert Systems | 1 session |
| | Test 2 | 1 sessions |
| | Knowledge Representation | 2 sessions |
| Period III | Project Disertations | 2 sessions |

Table: Schedule for Period II & III



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Grades Percentages

| Period | Item | Percentage |
|------------|------------------|------------|
| Period I | Assignments | 5% |
| | Workshops | 20% |
| | Test | 10% |
| Period II | Assignments | 5% |
| | Workshops | 20% |
| | Test | 10% |
| Period III | Paper + Poster | 5% |
| | Technical Report | 10% |
| | Course Project | 15% |

5
- 2

5
- 2

30%

Table: Systems Analysis 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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Bibliography

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

