

COURSE DESCRIPTION

Object-Oriented Programming

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Full-time Adjunct Professor
Computer Engineering Program
School of Engineering
Universidad Distrital Francisco José de Caldas

2025-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 **16 years**.
- 8 years as **full-time associate professor** at colleges, in Computer Engineering programs.
- 3 years as **lecturer professor** for both colleges and **government STEM** programs.
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Non-academic Experience



- **PyCon Colombia** and **Python Bogotá co-organizer.**
- 3 years as **software engineer** for several **tech companies** in Colombia.
- 3 years as **Technical Leader** of **Machine Learning and Data Science** at a **USA startup**.
- 1.5 years as **MLOps Engineer** for a **Fintech company** in **LATAM**.
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Overview

This course is designed to **introduce undergraduate students** to the **object-oriented design** as part of the foundation for becoming an experienced both *software developer* and *software architect*.

The course starts with a **brief introduction** to **object-oriented thinking**, **quality attributes**, and **software modeling**. Then, it transitions into **object-oriented analysis and design**, including **design principles**. Finally, we will focus on **object-oriented programming**, **good practices**, and basic **UML Diagrams** and **Documentation**.

Classes will consist of **lectures**, **discussions**, and **practical examples**. Also, you must take some readings from *software engineering*. In addition, there will be a **semester-long project**, as well as **one final course test**, **four workshops**, and **eight additional assignments**.



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Goals

The main goal of this course is to provide you with different concepts, tips, models and tools for solving software problems using object-oriented paradigm.

At the end of this course you should be able to create a complete monolithic software project solution with a good level of quality. Also, you should be able to design robust software systems using the object-oriented paradigm in a technology-agnostic way.



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Pre-Requisites

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

- **Programming** in Java, Python, or C++.

Additionally, it is desirable that you have some knowledge of:

- Basic usage of Git and GitHub.
- Use of IDEs like VS Code, Eclipse, or PyCharm.



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Open Source → extensions



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Syllabus I

Period	Topic	Time
Period I	Object-Oriented Analysis & Design	6 sessions
	Object-Oriented <u>Modeling</u>	7 sessions
	Workshop on Object-Oriented Design	1 session
	OOP — Inheritance and Polymorphism	10 sessions
	Workshop on OOP Implementation	1 session
	Course Project Catch-Up	2 sessions

Table: Schedule for Period I



Syllabus II

Period	Topic	Time
Period II	Object-Oriented Principles	7 sessions
	Workshop on OOP Principles	1 session
	Layer Architectures	6 sessions
	Concurrency	2 sessions
	Workshop on Layer Architectures	1 session
	Final Test	1 session
Period III	Project Dissertation	2 session

Table: Schedule for Period II & III



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Grades Percentages

Period	Item	Percentage
Period I	Assignments	5%
	Workshops	20%
	Project Catch-Up	10%
Period II	Assignments	5%
	Workshops	20%
	Course Test	10%
Period III	Paper + Poster	5%
	Report + Implementation	15%
	Presentation	10%

Table: Object-Oriented Programming Grades Distribution



Don't hate the player, hate the game

- All assignments must be submitted handwritten, on time and in English. Grammar and spelling will not be evaluated.
- Copying and pasting from the internet are forbidden. Please develop your own ideas and solutions.
- Class attendance is not mandatory. If you miss classes, you must study independently.
- No cell phones, no smartwatches, no WhatsApp, no Tinder, no smart-anything. Just you and your brain. Pay attention in class.
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Code of Conduct

- Always be **respectful** to your **classmates** and to me. You must be **kind** to everyone inside ~~(and outside)~~ the classroom.
- There is no best 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 complain**.
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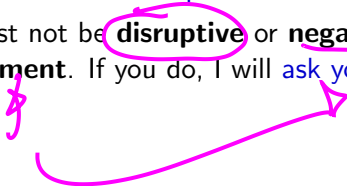
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Bibliography

Recommended bibliography:

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- **Thinking Java**, by [Bruce Eckel](#).
- **Java2: How To Program**, by [Deitel & Deitel](#).
- **Object-Oriented Analysis and Design**, by [Grady Booch](#).
- **Design Patterns: Elements of Reusable Object-Oriented Software**, by [Erich Gamma](#), [Richard Helm](#), [Ralph Johnson](#), & [John Vlissides](#).



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Thanks!

Questions?



My Profile: www.linkedin.com/in/casierrav

