DATABASES II Course Description

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Universidad Distrital Francisco José de Caldas

2025-III





- Course Overview
- Syllabus
- Grading & Rules
- 4 Bibliography





- Course Overview
- 2 Syllabus
- Grading & Rules
- 4 Bibliography





Overview

This course is designed to introduce undergraduate students to advanced topics in database systems and good practices in both database design and basic implementation.

This is **not** a course fully focused on **software engineering**, but it does cover the main concepts of **software systems building**.

Classes will consist of lectures, **discussions**, and **practical examples**. Also you will be required to complete some readings in *software development*. In addition, there will be a **semester-long project**, as well as one **final course test**, four **workshops**, and some additional **quices**.





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Goals

The main goal of this course is to provide undergraduate students with various models, concepts, and tools for solving the data layer of software problems using database systems based on software application project requirements.

By the end of this course, you should be able to **create** a full software **database solution** with a high level of **quality**. Also, you should be able to **design** robust database systems in an **agnostic** way.





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Pre-requisites

This is an advanced course so you should have some knowledge of:

- **Programming** in Python, Java, or C++.
- Object-Oriented Programming fundamentals.
- Basic concepts of Data Structures.
- Basic concepts of Relational Databases.
- Using IDEs such as VS Code Eclipse, or PyCharm,

Additionally, it is desirable to have some knowledge of:

- Basic concepts of UML and Class Diagrams.
- Basic usage of Git and GitHub.
- Basic Linux commands and basic usage of Dockers
- Basic usage of LaTeX for technical writing.





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Syllabus I

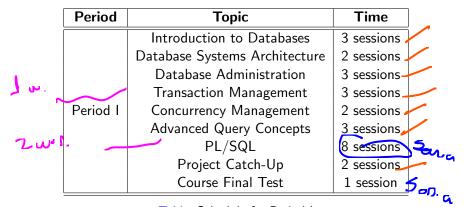


Table: Schedule for Period I





Syllabus II

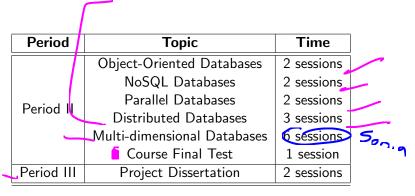


Table: Schedule for Period II & III





- Course Overview
- Syllabus
- Grading & Rules
- 4 Bibliography





Grades Percentages

Period	ltem	Percentage	
Period I	Quizzes	5% _	
	Workshops	15%	
	Project Catch-Up	5%	\ <u></u>
	Partial Test	10% -	1
Period II	Quizzes	5%	<u> </u>
	Workshops	15% _	
	Final Course Test	15%	
Period III	Paper + Poster	5%] <i> </i>
	Implementation $+$ Report	15%	100
	Project Presentation	10%	<u> </u>
			_

Table: DataBases II Grades Distribution





- All assignments must be submitted handwritten, on time, and in English. Grammar and spelling will not be evaluated.
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- 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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- 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.
- You must not be disruptive or negatively affect the classroom environment. If you do, I will ask you to leave the classroom.





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Bibliography

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- Database Management Systems, by Raghu Ramakrishnan and Johannes Gehrke.
- Fundamentals of Database Systems, by Ramez Elmasri and Shamkant B. Navathe.
- Introducción a los Sistemas de Bases de Datos, by C.J. Date.
- Procesamiento de Bases de Datos, Fundamentos, Diseño e Implementación, by David M. Kroenke.
- Sistemas de Bases de Datos: Conceptos Fundamentales, by Navathe Elmasri.





Bibliography

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- Database System Implementation, by Hector Garcia-Molina, Jeffrey D. Ullman, and Jennifer Widom.
- Fundamentos de Bases de Datos, by A. Silberschatz, H.F. Korth, and S. Sudarshan.
- Database Systems: Concepts, Design and Applications, by S.K. Singh.
- Database Systems: Design, Implementation, and Management, by Carlos Coronel, Steven Morris, and Peter Rob.





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Thanks!

Questions?





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

