TEACHING GUIDE - 2026-2027

Data analytics with SQL

UGRA_015704

Departments	Data, Analytics, Technology and Artificial Intelligence (DATA), Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English
ECTS	4
Teacher responsible	Jordi Tarda Valls - jordi.tarda@esade.edu

Course Goals

By the time the students finish the course, they should be able to :

- Understand key concepts of relational database management systems
- Understand the importance of database design through Entity-Relationship Diagrams and models
- Design and understand queries using Structured Query Language (SQL)
  - Perform a real-world database design and implementation in MySQL

Previous knowledge

No prior knowledge of databases is required for this course, but it is assumed that students are used to working with code editors.

Prerequisits

This course does not require any prerequisites.

Teaching methodology

The course requires students to be active participants in their own learning. Students are required to do some autonomous work to prepare each session. This preparatory work involves reading the content of the next session, reviewing the prior session, and doing and submitting exercises. The details of the preparatory work can be found in the website of the course.

The sessions will be divided into lectures and practicals. In the lecture sessions, the foundations and key concepts of each topic will be covered, while in the practical sessions, students will engage in 100% hands-on exercises, activities, and challenges, either individually or in groups. This course requires that all students bring their own laptop computer to the sessions to carry out different activities.

Class attendance is compulsory. In several sessions, students will do individual quizzes and team challenges. Those individual quizzes and team challenges will be announced in the course website before the session.

Description

Course contribution to program

This course is essential for consolidating and expanding the knowledge acquired in prior areas such as computing and data programming. By providing a deep understanding of how to structure, store, and manage large volumes of data, this course is crucial for the development of advanced and efficient predictive models in artificial intelligence. It also facilitates the creation of compelling narratives through data visualization, ensuring quick and reliable access to relevant information.

Short description

The primary purpose of this course is to provide students with a level of knowledge and skills that allow them to have a better understanding of how to manage and exploit data. Basic technical skills for the class covers database design and implementation: including entity-relationship modeling, normalization, structured query language and how to cretate and manipulate the information in a SQL Databases

Bibliography

Connolly, T. & Begg, C., Database Systems: A Practical Approach to Design, Implementation, and ManagementDatabase Systems: A Practical Approach to Design, Implementation, and Management, Pearson, 6th Edition (Book)

Content

#	Topic
1	Structured Query Language - SQL -
2	Relational Database Conceptual Modeling

Assessment

Tool	Assessment tool	Category	Weight %
Quizzes/tests	Individual (in-class) quizzes	Retake and ordinary round	20.00%
Group project	Teamwork – challenges	Retake and ordinary round	30.00%
Written and/or oral exams	Final exam	Retake and ordinary round	50.00%

PROGRAMS

AI26-Exchange Program Bachelor in Business and Artificial Intelligence (Undergraduates: Business)
AI26 Year 1 (Optative)

B13-Exchange Program Bachelor of Business Administration (BBA) (Undergraduates: Business)
B13 Year 1 (Optative)

BBA20-Bachelor of Business Administration (BBA) (Undergraduates: Business)
BBA20 Year 2 (Optative)

BBA23-Bachelor of Business Administration (BBA) (Undergraduates: Business)
BBA23 Year 2 (Optative)

BBA25-Bachelor of Business Administration (BBA) (Undergraduates: Business)
BBA25 Year 2 (Optative)

BBA25 Year 1 (Optative)