

Introduction to SQL

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| Tutor | Dr Nicolas Attalides |
| Organization | Digital Skills, University of Lucerne |
| Language | English |
| ECTS-Points | 1 |
| Contact | samuel.schmid@unilu.ch |
| Dates and time | Online: 06 December 2025, 9.30 a.m. to 4.30 p.m. (Day 1) 13 December 2025, 9.30 a.m. to 4.30 p.m. (Day 2) |

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| Content | <p>The SQL language provides a standardised way to work with structured data across virtually every field, from business reporting to scientific research. Whether you're querying millions of rows in a data warehouse or building reproducible analysis pipelines, SQL remains the go-to tool for reliable, high-performance data management and is a key skill that is used in data science, analytics, and engineering.</p> <p>This 2-day course focuses on introducing the participants to the core concepts and techniques of SQL through practical hands-on exercises on realistic datasets.</p> <p>The course is structured to cover the following topics:</p> <ul style="list-style-type: none">• Relational fundamentals: What a database is, the relational model, tables, and keys• Create, modify, and delete tables; define columns and data types• Insert, update, and delete records• Basic querying: Retrieve data, compute new columns, and work with dates• Filter data, sort data and deal with missing values• Aggregations and grouping in SQL• Merge information across two or more tables by performing joins (inner, left/right outer, etc.)• Build subqueries, Common Table Expressions (CTEs), and apply window functions |
| Prerequisites/ Materials | <p>No prior knowledge of SQL is required.</p> <p>Participants should have their own laptop with an internet connection. Instructions for any technical setup will be circulated by the instructor before the course. Learning material such as slides, code and solutions to exercises will be circulated by the instructor after the course.</p> |
| Teaching method | <p>This course includes a range of activities such as live-coding sessions, interactive quizzes and practical exercises to work individually or in a group. Active participation and contribution are highly recommended.</p> |