
DATABASE APPLICATIONS in Spring 2021 (CS3068)

Course Code	CS3068	Professor(s)	Tomer Libal
Prerequisites	None	Office Number	PL
Class Schedule	M: 15:20-16:40 in Q-604 R: 10:35-11:55 in Q-604	Office Hours	By appointment
Credits	4	Email	tlibal@aup.edu
Semester	Spring 2021	Office Tel. Ext.	

Course Description

Database applications can be found everywhere. In this course we will learn how to design, create and optimize database schemas, how to query the stored data and how to write server side procedures.

Course Learning Outcomes

Students will be familiar with the theory and basics of relational databases, including design and optimization.

Students will be able to manage database responsibilities from the point of view of a software developer and will be familiar with SQL, stored procedures, indexes and triggers.

Students will know how to communicate with DB administrators in order to support enterprise needs.

General Education

Course Outline

PART 1

Week I

Topic: ER Diagrams and relations I

book: Chapter 4,4.1-4.6 (p.119-165)

Exercise: 1 on Gradiance

Week II

Topic: ER Diagrams and relations II

PART 2

Week III

Topic: Relational algebra

book: Chapter 2,2.1,2.2,2.4,2.5 (p.15-28,38-62)

Exercise:

- 2 on Gradiance
- Questions 2.4.1 and 2.4.3 in the book, please use <https://dbis-uibk.github.io/relax/calc/local/uibk/local/0> to check your solution and send me by email the result. I will check it using this website. L

Week IV

Topic: Relational algebra

PART 3

Week V

Topic: SQL

Book: Chapter 6, 6.1, 6.2, 6.3, 6.4, 10.2 (p. 243-289,437-444)

Exercises:

- 3 on Gradiance
- The 4 labs on Gradiance

Week VI

Topic: SQL

Week VII

Topic: SQL

Week VIII

Topic: SQL

Week IX

Midterm

PART 4

Week X

Topic: Database programming, indexes and triggers

Book: 2.3, 6.5, 7, 7.1, 7.2, 7.3, 7.4, 7.5, 8, 8.1, 8.2, 8.3, 8.5, 9.3, 9.4 (p. 29-36,291-295,311-338,341-352,378-403)

PostgreSQL:

- [PL/pgSQL Guide](#)
- [ElephantSQL](#)
 - Create an account and a new free Tiny DB
 - Use the Elephant Browser

Exercise:

- [Exercise 4](#)
- [createTables.sql](#)

Week XI

Topic: Database programming, indexes and triggers

PART 5

Week XII

Topic: Database design

Book: 3,3.1-3.5 (p. 67-105)

Exercise: 5 on Gradiance

Week XIII

Topic: Database design

Week XIV

Topic: Database design

Week XV

Topic: Database design

Textbooks

This course doesn't have any textbook.

Attendance Policy

Students studying at The American University of Paris are expected to attend ALL scheduled classes, and in case of absence, should contact their professors to explain the situation. It is the student's responsibility to be aware of any specific attendance policy that a faculty member might have set in the course syllabus. The French Department, for example, has its own attendance policy, and students are responsible for compliance. Academic Affairs will excuse an absence for students' participation in study trips related to their courses.

Attendance at all exams is mandatory.

IN ALL CASES OF MISSED COURSE MEETINGS, THE RESPONSIBILITY FOR COMMUNICATION WITH THE PROFESSOR, AND FOR ARRANGING TO MAKE UP MISSED WORK, RESTS SOLELY WITH THE STUDENT.

Whether an absence is excused or not is ALWAYS up to the discretion of the professor or the department. Unexcused absences can result in a low or failing participation grade. In the case of excessive absences, it is up to the professor or the department to decide if the student will receive an "F" for the course. An instructor may recommend that a student withdraw, if absences have made it impossible to continue in the course at a satisfactory level.

Students must be mindful of this policy when making their travel arrangements, and especially during the Drop/Add and Exam Periods.

Grading Policy

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- 10% midterm exam
 - 50% homework
 - 40% final exam

Other
