
DATABASE APPLICATIONS in Fall 2018 (CS3068)

Course Code	CS3068	Professor(s)	Tomer Libal
Prerequisites	None	Office Number	SD09
Class Schedule	MR: 16:55-18:15 in PL-4	Office Hours	By appointment
Credits	4	Email	tlibal@aup.edu
Semester	Fall 2018	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 program on both the server and client side.

Course Learning Outcomes

be able to take care of all database responsibilities from the point of view of a software developer
cooperate with a database administrator

General Education

Course Outline

This is a tentative course schedule.

September

Week I – 10th -14th

TOPICS:

- Introduction
- Administration
- Entity-relationship Diagrams

READINGS

- Book chapters 1 and 4.1-4.4

September 16th – last day to drop/add courses online

Week II - 17th - 21th

TOPICS

- The Relational Model
- ER Diagrams to Relations
- Relational Algebra

READINGS

- Book chapters 2.1-2.2,2.4-2.5

Week III - 24th – 28nd

TOPICS

- Relational Algebra - Basic Operators

READINGS

- Book chapters 2.4-2.5

October

Week IV – 1st - 5th

TOPICS

- Relational Algebra - Advanced Operators

READINGS

- Book chapters 2.4-2.5

Week V – 8nd - 12th

TOPICS

- ElephantSQL
- PostgreSQL DDL
- SQL

READINGS

- Book chapters 2.3, 6.5, 6.1-6.4

Week VI - 15th - 19th

TOPICS

- SQL

READINGS

-
- Book chapters 6.1-6.5

Week VII – 22nd – 26th

Monday 22nd - Session I

TOPICS

Midterm Exam

- ER Diagrams
- Relations and ER to Relations
- Relational Algebra

READINGS

Thursday 25th - Session II

TOPICS

- SQL

READINGS

- Book chapters 6.1-6.5

October 26th, Mid-semester grades due

Week VIII – 29th – Nov.2nd

Monday 29th - Session I

TOPICS

-
- SQL
 -

October 31ST - November 2nd, (included) fall break, No classes

November

Week IX – 5th – 9th

TOPICS

- Database Programming and Stored Procedures

READINGS

- Book chapter 9.4
- [PIPGSQL Manual](https://www.postgresql.org/docs/9.6/static/plpgsql.html) - <https://www.postgresql.org/docs/9.6/static/plpgsql.html>

November 9th – last day to withdraw from a course/no credit option

Week X - 12th -16th

TOPICS

- Triggers
- Client side Programming

READINGS

- Book chapter 7.5, 9.7

Week XI -19th – 23rd

TOPICS

- Indexes
- Intro to Normalization

READINGS

- Book chapter 8.3-8.5

Week XII -26th - 30th

TOPICS

- Functional Dependencies
- Armstrong's axioms
- Proof Theory

READINGS

- Book chapter 8.3-8.5

December

Week XIII – 3rd – 7th

TOPICS

- Proof Theory
- Keys and Superkeys
- Normal Forms
- Database Normalization

READINGS

-
- Book chapter 8.3-8.5

Week XIV - 10th - 14th

TOPICS

- Normal Forms
- Database Normalization

READINGS

- Book chapter 8.3-8.5

December 12th, Last day of classes, December 13th -16th, Reading days

December 17th – 21st Final exams

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

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

Other
