

CSC/CPE 365: Introduction To Database  
Systems  
Winter 2023  
Course Syllabus

January 12, 2023

**Instructor:** Alexander Dekhtyar  
**email:** dekhtyar@calpoly.edu  
**office:** 14-212

What	Section 05		
Lecture	TR	12:10 – 1:30pm	20-139
Lab	TR	1:40 – 3:00pm	20-127

**Office Hours**

	When	Where
Tuesday	10:10 - 11:00am	14-212
Wednesday	9:10 - 10:00am	14-212
Wednesday	3:10 - 4:00pm	14-212
Thursday	8:30am - 9:30am	14-212

(note: some of these times may change slightly at some later point)

Additional appointments can be scheduled by emailing the instructor at *dekhtyar@calpoly.edu*.

## Overview

This is an introductory database course devoted to study of the principles of operation of modern relational database systems. During the course the students will learn the basic concepts of data management, the principles of operation of relational DBMS (Database Management Systems) and the principles of building database applications on top of relational DBMS. The students will study the SQL query language for relational data, and will learn how to use it to construct software that relies on DBMS to manage its data. In addition, some theoretical

aspects of database management will be covered, as well as an overview of the internal organization of the DBMS. Course labs will use Oracle DBMS.

## Textbook

**Required:** *Database Systems: The Complete Book*. H. Garcia-Molina, J.D. Ullman, J. Widom, 2009, 2nd Edition, Prentice Hall.

*You can replace it with this book:*

*A First Course in Database Systems*, J.D. Ullman, J. Widom, 2007, 3rd Edition, Prentice Hall.

(The latter book comprises the first half of the former. It is sufficient for the CSC 365 purposes. However, "The Complete Book" is also our textbook for other database courses).

## Topics

The following will be covered in the course.

No.	Topic	Duration (weeks)
1.	Introduction: Data and Data Management	1
2.	Relational Model	1
3.	Relational Algebra	1-2
4.	SQL	3-4
<b>Midterm</b>		Topics 1 – 4.
5	JDBC	1
6.	Overview of query processing and DBMS architecture	2
<b>Final Exam</b>		Comprehensive

Most of the topics will be covered in the order specified above, but some variations are possible during the course.

## Grading

<b>Homeworks</b>	0-5%
<b>Labs</b>	40 – 50%
<b>Midterm Exam</b>	20-25%
<b>Final Exam</b>	25 -35%

## Course Policies

### Exams

We will have two midterm exams, and no final exam in this course. In lieu of the final exam, there will be a mini-project due final week of classes.

Midterm 1 will take place around Week 6 of the class. To account for delayed start of the class, Midterm 1 may take place during Week 7. (We will avoid February 14 as a holiday many of you may be taking advantage of, so tentative dates are either February 16 or February 21).

Midterm 2 will take place on the last day of classes (Thursday, March 16). There is a **slight** possibility that Midterm 2 will take place on Tuesday, March 14 (due to instructor's personal reasons).

Midterm 1 will be paper-and-pencil exam. Midterm 2 will either be fully paper-and-pencil, or will consist of a paper-and-pencil, and a lab portions. The specifics will be disclosed fully around Week 8 of classes.

The official date and time for the final exam is *Thursday, March 23, 1:0pm - 4:00pm*. We will have our last lab project due this day (or a day earlier).

Make-up exams will not be given, *unless there are extraordinary circumstances present and I am notified in advance (see COVID-19 section below)*. The policy regarding the use of textbooks and notes will be announced at least one week prior to each exam.

## Homeworks, Labs

The course has 7-8 lab assignments, designed to let you test in practice what we have learned in class. Each lab assignment spans multiple lab sessions. Most assignments have a one-week span. The final lab is a team mini project and is longer. Each lab assignment is due by the end of lab period on the due date (unless specified otherwise). You are welcome to work on the lab assignments outside the lab hours, however, lab period attendance is highly encouraged. Most lab assignments are individual work..

In addition to labs, a number of paper-and-pencil homeworks will be assigned. Homeworks will typically consist of problems taken from database textbooks, or similarly styled problems. The main purpose of the homeworks is to prepare you for the written exams. As such, homeworks are not graded (you get credit for submitted completed homework).

### LabThreeSixFive

In this course we will both work directly with a MySQL server and will use `labthreesixfive.com`, a CSC 365-specific SQL assignment management tool built by Professor Andrew Migler and used extensively in teaching of CSC 365. You all will be granted accounts on `labthreesixfive.com`. Most major SQL labs will require submission of queries via the `labthreesixfive.com` (among other things, it provides for accurate and responsive automated grading so you will be able to receive expedient feedback on your labs). Some labs will require development using direct access to a MySQL server, while other labs will be conducted fully inside the `labthreesixfive` environment.

## Late Submissions

All assignments are due on the specified date by the specified time: homeworks - at the beginning of the class (with grace period extending to the beginning of the lab period); lab assignments, by the specific lab assignment deadline. Any deviations from these rules will be spelled out explicitly in the assignments.

Homework/lab assignments submitted later than indicated above will be considered *late submissions*.

If paper-and-pencil homework solutions are distributed on the due date of the homework, ***late homework submissions will not be accepted***. Otherwise, late homeworks can be submitted during next 24 hours for a 10-30% penalty (the exact amount will depend on the submission time and the specific circumstances). No homework submissions will be accepted afterwards.

Late lab assignment submissions can be turned in before or at the beginning of the next lab period for a 10-30% penalty (the exact amount will depend on the submission time and the specific circumstances<sup>1</sup>). No lab assignment submissions will be accepted after that.

## Communication

**Slack.** We will have a slack workspace for this class. My experience with communication over Slack vs. communication via email suggests that Slack is a better medium. I will use the Slack workspace to post relevant course-related information, respond to your questions and broadcast any relevant course information to you.

I encourage both public and private messages on Slack and make every effort to respond to them expediently.

I encourage questions during classtime and questions via email and Slack. My answers to email/Slack questions may be broadcast to the entire class via the mailing list or over Slack, if the answer may be relevant to everyone (e.g. a correction in a text of a handout, or a clarification of a homework problem), and may also appear on the web page.

**It is your responsibility to read your class-related email and to watch the course Slack workspace for announcements. Failure to read email/follow Slack workspace cannot be used as an excuse in the course.**

## Web Page

Class web page can be found at

<http://www.csc.calpoly.edu/~dekhtyar/365-Winter2023>

Through this page you will be able to access all class handouts including homeworks, project information and lecture notes (should the latter be written).

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<sup>1</sup>The penalty will be larger if the gap between the two lab periods includes a weekend, and smaller otherwise

Links to web pages with additional information and important notes and announcements will also be posted.

## COVID-19 Policies

This course will follow the University's COVID-19 policies, regulations, and recommendations.

Specifically:

- Your physical presence in class is a self-certification that you are following the procedures proscribed by the University w.r.t. COVID-19 testing and self-assessment.
- Masks are optional. You are always welcome to wear one in class.
- If you have contracted COVID-19 or any other communicable disease and are isolating/in quarantine, or if you are unable to attend classes for any other reason, please let me know. I am available via zoom during all office hours (see above), and if necessary, we may schedule a zoom conversation outside of office hours to discuss coursework.
- If you are absent for more than two consecutive weeks due to COVID-19 or any other unforeseen circumstances, I will work with you in case you want to withdraw from the course. Absences of more than two weeks from the course may create a situation where you are in danger of falling behind in the coursework and not recovering. If you are interested in retaking CSC 365, I will make sure you will be registered for another section of it in the Winter quarter (although it might be with a different instructor).
- I may not be able to provide for adequate ability for students to join the lectures from their homes via zoom. The way in which I lecture makes it difficult to properly set up on-line participation and/or recording of the in-class lecture. At the same time, all course materials will be available on the course web page, and I will try to provide succinct commentary of what we accomplished in class on our Slack workspace.
- If you have to miss an exam due to COVID or have other extenuating circumstances, **first and foremost get in touch with me BEFORE the exam takes place!** Depending on your circumstances, we will try to come with appropriate accommodations.

## Academic Integrity

### University Policies

Cal Poly's Academic Integrity policies are found at

<http://www.academicprograms.calpoly.edu/academicpolicies/Cheating.htm>

In particular, these policies define *cheating* as (684.1)

*“... obtaining or attempting to obtain, or aiding another to obtain credit for work, or any improvement in evaluation of performance, by any dishonest or deceptive means. Cheating includes, but is not limited to: lying; copying from another’s test or examination; discussion of answers or questions on an examination or test, unless such discussion is specifically authorized by the instructor; taking or receiving copies of an exam without the permission of the instructor; using or displaying notes, ”cheat sheets,” or other information devices inappropriate to the prescribed test conditions; allowing someone other than the officially enrolled student to represent same.”*

Plagiarism, per University policies is defined as (684.3)

*“... the act of using the ideas or work of another person or persons as if they were one’s own without giving proper credit to the source. Such an act is not plagiarism if it is ascertained that the ideas were arrived through independent reasoning or logic or where the thought or idea is common knowledge. Acknowledgement of an original author or source must be made through appropriate references; i.e., quotation marks, footnotes, or commentary.”*

University policies state (684.2): “Cheating requires an “F” course grade and further attendance in the course is prohibited.” (appeal process is also outlined, see the web site above for details.). Plagiarism, per university policies (684.4) can be treated as a form of cheating, although a level of discretion is given to the instructor, allowing the instructor to determine the causes of plagiarism and effect other means of remedy. It is the obligation of the instructor to inform the student that a penalty is being assessed in such cases.

### **Course Policies**

All homeworks are to be completed by each student **individually**. Lab assignments are to be completed by the appropriate units (individual, pair, group), and no code/solution-sharing between units is permitted. Students are encouraged to discuss class content among themselves but NOT in a manner that constitutes plagiarism and cheating as defined above (e.g., you can solve together a problem from the textbook that had not been assigned in the homework, but you should solve assigned problems individually).