

# Database Systems – CSCI 3410

Fall 2020

Last update: January 7, 2021

## Quick Facts

- *All the information in this syllabus is subject to change, especially regarding the schedule and evaluation.*
- Class meets MW 2:30 PM–3:45 PM in [Hull McKnight GA Cyber Center, 2201](#)
- The instructor’s contact and office hours are at [spots.augusta.edu/caubert/#contact](https://spots.augusta.edu/caubert/#contact).
- You can [download this syllabus](#), but make sure you check [spots.augusta.edu/caubert/db/](https://spots.augusta.edu/caubert/db/) periodically.
- The lecture notes are at [spots.augusta.edu/caubert/db/ln/](https://spots.augusta.edu/caubert/db/ln/).
- For the detail of the planning and evaluations, refer to [the planned schedule](#).
- For specific information about returning to campus, please [refer to the JagWire](#) for a useful list of resources.

---

## Presentation

### Factual

This is Database Systems – CSCI 3410 - 20444 - A, an undergraduate semester class of 3.000 credits, whose pre-requisite is a minimum grade of C in CSCI 3400. We will *not* be using an hybrid course model, the class will be fully face-to-face, but we will enforce the University’s [regulations on social distancing and face covering](#). We will be primarily using my [own set of lecture notes](#), that you can download for off-line consulting in multiple formats. You will need a computer with admin rights to install (free) software such as MySQL or a virtual machine.

### Course Description

This course offers an introduction to database systems as a key concept in information management. The course covers logical and physical database organization, data models, file structures, indexing, hashing, query optimization, and design issues. This course will cover the design and implementation of databases.

## Learning Outcomes

Upon successful completion of this class, the student will:

- Understand key concepts in databases, such as the entity-relationship model, the relational database model and constraints, as well as relational algebra and relational calculus.
- Be able to design databases by mapping ER relations, use SQL and SQL programming, as well as stored procedures and triggers.
- Understand advanced topics such as normalization, hashing techniques and data storage mechanisms.

---

## Planned Course Schedule

The week starts on *Monday*. You can also consult the usual schedule in [the lecture notes](#).

Week	Date	Note	Topic
1	08/10	-	Syllabus, Introduction
2	08/17	-	The Relational Model
3	08/24	08/26 : <b>Quiz</b>	-
4	08/31	-	SQL
5	09/07	09/07: <i>Labor Day</i> , 09/09: <b>Project</b>	-
6	09/14	09/16: <b>Exam</b>	Review Session
7	09/21	-	Entity-Relationship Model
8	09/28	09/30: <b>Quiz</b> , 10/01: <i>Midterm</i>	E.R.-to-Relational Models Mapping
9	10/05	-	Guidelines and Normal Form
10	10/12	-	Unified Modeling Language Diagram
11	10/19	10/21: <b>Quiz</b>	Introduction to Data Programming Using Java
12	10/26	-	-
13	11/02	11/04: <b>Exam</b>	Review Session
14	11/09	-	Introduction to NoSQL
15	11/16	11/18: <b>Project</b>	-
16	11/23	11/23–27: <i>Thanksgiving</i>	-
17	11/30	12/8 (2–4PM): <b>Final</b>	-

## Grades

Students will be evaluated using four different types of evaluation:

1. Homework assignments will be given during the course of the semester: they are not expected to be handed back, and won't be graded, but quizzes with questions taken or inspired from those assignments will be given. Those quizzes are closed book and timed ( $\pm 10$  min.).
2. Projects will be carried at home.
3. There will be in-class exams, held during the regular class periods.
4. The final exam will take place during the [exam period](#).

Refer to the [planned schedule](#) for precise dates, and to [Brightspace/D2L](#) to get your current grades. Exams yearbooks can be found in [the lecture notes](#): they give a good indication of how you will be evaluated.

Your grade will be computed as follows:

---

Quizzes ( $\times 3$ )	10%
Project ( $\times 2$ )	10%
In-class Exams ( $\times 2$ )	40%
Final Exam	40%

---

using the following course grade scale:

---

Below 65	65–70	70–79	80–89	90–100
<b>F</b>	<b>D</b>	<b>C</b>	<b>B</b>	<b>A</b>

---

Refer to the [Course Requirements](#) for information about late or missed evaluations.

---

## Format, Teaching Philosophy & Requirements

### Format and Procedures

Lectures are devoted to general explanations of the concepts and ideas underlying the topic at stake. All practical work, coding, programming, testing, etc. will be carried at home or in the lab portion if there is one.

Homework assignments will assist the students in making sure they understand classes expectations and the content of the lecture, as well as to practice their coding and problem-solving skills. The progression of the students will be regularly tested and assessed through quizzes and exams. Active and relevant participation during the lectures is appreciated.

### Teaching Philosophy

It is our mutual interest for you to succeed: I love to share knowledge and to expand it by helping students, and students want to gain a useful and agreeable experience that will prove valuable in their future endeavors. To this end, here is:

### What I'm expecting from you

- Check periodically your email account and read the email I send.
- Read this entire syllabus carefully.
- Participate actively in all class discussions.
- Do the homework wisely: read your notes before starting the homework assignment, make sure you understand it completely before considering it done.
- Come prepared and on time to classes, exams and quizzes.

### What you should expect from me:

- Clear and accessible lectures.
- Fair and impartial grading.
- Availability, during office hours, by appointment, and by email.
- Open hear to your suggestions to improve this class.
- Commitment to the principles of [universal design](#).
- Dedication to your success!

You can have a look at my [Quick Reflexion on Course Evaluations](#), that contains my previous student evaluations, and at my [“Definitive” Study Guide](#).

## Course Requirements

- Attendance is not mandatory. However, if you come to class, come on time, and stay until the end of the lecture: late arrival and early departure disturb the learning experience for everyone.
- No laptop or similar electronic device is allowed during the lectures. This policy will help you to [improve your grades](#), [increase memorization](#) and to [be more respectful of your fellow students](#).
- You are responsible for all course material, whether or not you attend lectures or do the assigned reading or coursework.
- It is the student's responsibility to [initiate a withdrawal](#) before [midterm](#), but I [reserve the right to withdraw](#) a student that missed too many meetings, or is performing poorly, after being given two chances to explain themselves.
- A student not withdrawn from a course who stops attending class (or who never attends class) is subject to receiving a grade of **WF** or **F**.
- All coursework is individual coursework.
- Any student missing the final exam without an documented excuse (brought to our undergraduate study director [Anthony Lawrence](#) or to [the dean of Student Life](#)) or who has not taken action to withdraw will receive a grade of **F**. In case of an documented emergency at the time of the final, the student may be allowed to receive a grade of **I**.
- No make up quizzes or exam will be allowed. In case of a documented excuse (cf. previous item), the instructor may offer to place the weight of the missed exam or quiz onto the final's weight.

In case of conflict, the proper etiquette is to reach out to me, and if no solution can be found, then we should turn to our undergraduate study director [Anthony Lawrence](#) or to [the dean of Student Life](#) to help as an ombudsman.

---

## Practical Information

### Lab Space

For this class, you will need to access a computer. You can either:

- Visit one of the [Computer Labs](#),
- Use your personal computer.

If you need room to engage in a synchronous class, you can go to

- The [University Hall \(UH\)](#) lounges on the 2nd and 3rd floor,
- The [Academic Success Center UH156](#), including UH157 and UH160,
- The Butler room in the [Jaguar Student Activities Center \(JSAC\)](#) from 10AM to 3OM

## Getting Help

I should be your first point of contact for any question regarding the content of this class, but many other resources are available:

- If you are food insecure, [you are not alone](#), and the [Open Paws Food Pantry](#) will help you.
- For tutoring resources, consult the [Academic Success Center](#) (or “ASC”). It can help you, among other things, in the areas of time management, test preparation and study strategies.
- The [Testing & Disability Services](#) (or “TDS”) can help you—and me!—accommodate this class.
- The [Student Counseling & Psychological Services](#) (or “SCAPS”) is here to assist students with a variety of personal, developmental, and mental health concerns.
- The [Writing Center](#) can help you with any written, oral, or multimedia project.
- To get help with technologies, refer to our [Instructional Technology Support](#) correspondent Sienna Sewell, whose contact can be found [on the Continuity webpage](#).

## ACM Club

The [Augusta University chapter](#) of the [A.C.M](#) is one of the university’s best resources for Computer Science, Information Technology and Cyber Security students. It provides a platform to network with other students in similar majors; presenting countless opportunities to expand not only the people you know, but also a fantastic place to learn and ask questions. Because of Covid-19, we will only be holding meetings virtually in [our Discord server](#). If you are interested in joining these meetings, or you have any questions about Computer Science or Cyber Security, feel free to join through our link.

## Covid

The University has implemented specific requirements to minimize exposure to COVID-19 and support the safety of all during the pandemic. These requirements apply to all persons on campus (faculty, staff, students, and visitors). These requirements are subject to change. Visit [jagwire.augusta.edu/coronavirus/](#) and [augusta.edu/reopening/](#) for the latest details.

## Face Coverings

All persons must wear an appropriate face covering while inside campus facilities/buildings, including classrooms, regardless of the size of the space. The face covering must fit closely and fully cover the nose and mouth. Such coverings must be used in addition to—not as a substitute for—social distancing. If a medical condition prevents you from wearing a face covering, you may provide documentation to request an accommodation through Testing and Disability Services (706-737-1469 or [tds@augusta.edu](mailto:tds@augusta.edu)), and must show proof of the accommodation when asked.

## Social Distancing

All persons must maintain at least six (6) feet of separation from others. This distance should be maintained at all times and in all spaces, indoors or out, including classrooms, except where closer proximity is brief and logistically unavoidable (e.g. elevators, hallways). Keep your distance, do not gather in groups, and avoid crowded spaces. Sit only in designated areas in classrooms or similar spaces, and do not move seats or desks in classrooms or common spaces.

## Proper Hygiene

All persons should wash hands thoroughly and often with soap and water (for at least 20 seconds) or hand sanitizer (containing at least 60% ethanol or 70% isopropanol). Avoid direct contact with high touch surfaces (doorknobs, light switches, campus equipment, devices, vending machines, etc.) and avoid sharing devices, books, pens, or other learning aids with others.

## Personal Disinfection Supplies

All persons are responsible for disinfecting their own workspaces before and after use, including desktops, seats, and any shared equipment. Students, faculty, and staff are responsible for providing their own supplies for this purpose. Used supplies should be disposed of properly.

If you notice an empty hand sanitizer dispenser, or a missing disinfectant spray bottles, you can call **706-721-5024** to replace COVID prevention items.

## COVID-19 Reporting

Your role is critical to protect the safety of our entire AU family. Any student who is exhibiting symptoms of COVID-19 may be required to leave class and seek medical attention at Student Health Services (at 706-721-3448) immediately. Do not come on to campus if you have any symptoms of COVID-19.

## Where to Go for More Information About COVID-19?

- Augusta University COVID-19 resources
  - Campus Reopening: [augusta.edu/reopening/](https://augusta.edu/reopening/)
  - Welcome Back information for students: [augusta.edu/welcome-back/](https://augusta.edu/welcome-back/)
  - COVID-19 resources on Jagwire [jagwire.augusta.edu/coronavirus/](https://jagwire.augusta.edu/coronavirus/)
  - Frequently Asked Questions for students: [my.augusta.edu/reopening/faq](https://my.augusta.edu/reopening/faq)
- Guidance on symptoms and getting tested
  - Free virtual screenings: [augustahealth.org/covid-19](https://augustahealth.org/covid-19)

- AU Health System COVID-19 Hotline: 706-721-1852
- Student Health Clinic: 706-721-3448 or [augusta.edu/shs/](http://augusta.edu/shs/)

---

## Legal and Recommendations

### Academic Integrity

The University's [Student Code of Conduct](#), the [student's manual](#), the [academic regulations](#) as well as the [applicable policies](#) are supposed to be known by the students and will be enforced.

Section 5.2, Academic Conduct of the [student's manual](#) defines precisely what kind of collaborations are acceptable. As long as you don't lie, cheat, plagiarize, assist others or being assisted by others without authorization, we should not need any of that. If you are unsure about whether or not certain kinds of collaboration are permissible, please ask me.

### Universal Design

I am committed to the founding principles of [Universal Design](#), and to make [my lecture accessible to every one](#). Concretely, that means that I'm not requiring you to use a particular Operating System, that I always try to give the information repeatedly, and using multiple channels, that I am available over the phone, email, or in my office. If you are registered with [Testing and Disability Services](#), please see me at your earlier convenience to discuss accommodations.

### Campus Carry Legislation

Please be aware of the [USG guidance on House Bill 280](#). Note that you **may not** carry a handgun if high school students are enrolled in the class, and that it is your responsibility to visit the registrar to determine whenever this is the case or not.

## Miscellaneous

- Reservation of rights: I reserve the right to change this syllabus without limitation and without prior notice. If I do substantially modify any item or policy, I will notify you during a lecture, or send an e-mail to your [augusta.edu e-mail](#) account.
- Download a [pdf version](#) of this page.
- Contact: [caubert@augusta.edu](mailto:caubert@augusta.edu) and [spots.augusta.edu/caubert/#contact](https://spots.augusta.edu/caubert/#contact)
- Created with [debian](#), [pandoc](#) and [latex](#).



- All my documents are under [Creative Commons Attribution 4.0 International License](#). Sources are available upon motivated request.
- You will need a pdf reader to consult some of the documents: I recommend choosing an [open-source pdf reader](#).