

Course Syllabus

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BIS 235 COURSE SYLLABUS

Special COVID Announcement: Although your course was/may have been scheduled to meet on campus, it is running as a fully online course. Please consult with your faculty member and academic advisor right away in week 1, if you have concerns completing this course as a fully online student.

Weekly web conferences will be scheduled and held by the faculty member. Recordings or other supplementary resources will be shared. In addition to other weekly activities, students are encouraged to participate in these synchronous opportunities if schedule allows, or review the recordings when posted.

For current information visit: <https://www.peirce.edu/covid-19> (<https://www.peirce.edu/covid-19>)

Course syllabus header content, faculty contact and basic course information

Course Information	Faculty Information
Course Title: BIS 235, Database Management Systems	Professor: Michael Chu Office: by Appointment
Credits: 3 Prerequisite: BIS 111	Office Hours: By Appointment
Synchronous Sessions: Fridays 5:30pm (optional)	Email: mchu@peirce.edu Office: 8565620049
Class Dates: Tuesday Sept. 6 - Monday Oct. 31, 2022 Academic Calendar  (https://www.peirce.edu/content/pdf/academic-calendars/2022-2023_Peirce_College_Academic_Calendar-FINAL.pdf)	

Required Textbooks, Readings, and Videos:

- Forta, B. (2012). *SQL in 10 Minutes, Sams Teach Yourself* (4 edition). Indianapolis, Indiana: Sams Publishing.

ISBN: 9780672336072

(We use this book primarily as an SQL reference text. The web is also an excellent SQL reference via your favorite search engine, so if you are really strapped for cash you can forgo this, but it is currently under \$25 on Amazon.com, and I for one find a physical reference text extremely handy, and this is a good one that will be useful down the line if you do anything with SQL again.)

- Various free handouts made available in the course file sharing
- Video lessons available embedded in the course website and on YouTube - (Don't skip these! They are essential to your success in the class! You are expected to take notes on these videos as well, the same as you would in a face-to-face class!)

Course Description:

BIS 235 introduces students to fundamental relational database design and practical database system use. Topics include database design techniques using the entity-relationship approach, the relational model, commercial query languages, and normalization techniques. The course also provides hands-on exercises for applying these techniques to real-world problems.

Learning Outcomes:

At the conclusion of this course, students will be able to:

- Represent the requirements of a realistic data management problem using the Entity-Relationship model
- Translate an entity-relationship model into a relational schema
- Use data definition language (DDL) SQL to implement a given relational schema in a modern relational database management system
- Use data manipulation language (DML) SQL to populate and maintain the data in a relational database
- Generate the SQL queries required to address realistic ad hoc and routine organizational data needs, including those requiring multi-table joins, nested select statements, aggregation and derived values.
- Determine the normal form of a given schema (up to third normal form) and, if that form is less than 3NF, normalize it to a given level (up to 3NF)
- Explain the concepts of unique identifiers, foreign keys, referential integrity, the consequences of violating referential integrity, and mechanisms for enforcing referential integrity

In sum, in this course you will learn how to design, implement, maintain, and use a relational database created in a modern relational database management system (currently MySQL 5.1).

Class Requirements:

No previous experience with databases or database management systems is required for this class. A basic level of computer literacy is expected. Students in this course need to produce numerous computer-generated diagrams. While such diagrams can be generated in a variety of software packages including Microsoft Word, it is strongly recommended that you use Microsoft Visio for the diagrams in this class. The software can be freely downloaded by following the instructions for accessing MSDNAA software. In addition, you will need to download and install Oracle VirtualBox, a software for installing virtual computers withing an existing system. Using VirtualBox, you will install a basic Linux system from which you will run MySQL. Detailed instructions for doing so can be found on the Installing MySQL tab or you can watch the Installing MySQL video .

Like many classes at Peirce College, this section of BIS 235 is accelerated. This means we will compress 14 weeks' worth of learning and effort into 7 calendar weeks. Taking this course is equivalent to taking 2 non-accelerated courses at once. This makes for a major time commitment, and you should be certain to set aside enough time in your schedule to complete the work for this course.

As your instructor it is my responsibility to provide learning opportunities to enable you to achieve the course learning outcomes detailed above. I have planned to do so through online discussions, collaboration, exercises and/or projects.

Synchronous class meetings will be scheduled each Tuesday evening for the duration of the session, but you get to decide which of those class meetings (if any) you are going to attend. Students will NOT be penalized academically for missing class. HOWEVER, what we cover during these classroom sections will be valuable, and you may find that getting the grade you want in the class is much easier if you do show up to class regularly. That said, all of the information you need for the course is available online and you have synchronous opportunities with the instructor. It is your responsibility to plan accordingly for your own success in the class. If you find yourself struggling, you should plan to attend class and/or office hours and tutoring.

Additional Information about "FIT":

Peirce Fit Expectations:

Complete all required course assignments and abide by the Academic Policies in the Student Policy Handbook and those outlined in the syllabus.

FAQs--Note the special announcement at the top of the syllabus, **this course section is fully online** with the weekly online 90-minute synchronous sessions following the Peirce FIT general guidelines.

- Will class be held on campus every week? Yes, for students who enrolled in this course expecting an on campus experience, class will be held every Tuesday from 5:30 - 9:30 PM EST.
- If I attend class on campus, must I stay for the entire class? Ideally, yes, students who opt to participate in an on campus class should arrive on time for the start of class and participate until class is dismissed. That said, if you can attend for part of the class but not all, you are welcome to do so. Note, however, that arriving significantly late to a class session can dramatically compromise

your ability to benefit, as efforts to get latecomers up to speed are not always possible. To get the most out of class, get there on time.

- Can I alternate between an on campus learner and virtual learner throughout this course? Yes, you can determine the manner in which you will complete this course on a week by week basis and there is no limit to the number of times you toggle between an on campus learner and virtual learner. If you find yourself struggling with the material, however, one of the best things you can do is to come to class regularly.
- Are the assignments the same for online and on campus students? Yes, all students are responsible for completing the same assignments in the same manner and at the same time irrespective of whether or not they opt to participate on campus in any particular week.
- What will happen in the classroom? The instructor will provide practice assignments, answer face-to-face questions, review material from prior homeworks and other assignments, and in general seek to maximize participating students' comprehension of the given week's objectives. To maximize your benefit, come to class having reviewed the week's materials thoroughly and with prepared questions about that material. Remember, you don't have to come to class if you do not wish to, so make sure to come ready to get the most out of it!

Student Responsibilities

Late Policy

All assignments and projects are due by 11:59 PM on the day that they are due (with the possible exception of the final week -- consult the course calendar below for details). There are also no make-up exams. Consult your instructor for details on their late policy.

Class Participation


As a student it is your responsibility to take ownership of your learning by logging into class, interacting with your instructor and classmates online and by completing all readings and assignments and asking questions/seeking help when you need to.

If you opt to come to class, come prepared and ready to get the most out of the time.

Attention to Detail

It is your responsibility to upload work to the appropriate assignment and it is your responsibility to check and double-check the content of the file or files that you are uploading. Everyone makes mistakes of course, but that doesn't change the fact that double checking is your responsibility. Files uploaded to the incorrect assignment will NOT be graded. The file(s) that you submit to a given assignment will be the ones that are graded, whether they are the files you intended to submit or not. I can't tell what you intended submit and what you did not. That is your responsibility. Double check what you are submitting and where you are submitting it every time.

Academic Integrity

Academic honesty is fundamental to our community. The [Peirce College Undergraduate Catalog](https://www.peirce.edu/degrees-programs/additional-resources/college-catalogs)  (<https://www.peirce.edu/degrees-programs/additional-resources/college-catalogs>) contains our Academic Honesty Policy. A confirmed violation of that code of conduct in this course will result in discipline in accordance with College policy. In particular, please note the following regarding academic integrity issues in BIS 235:

- All homework assignments are to be completed *individually*. You may not share your work with classmates or seek help on specific problems. While it is fine to ask a classmate or other individual a general question along the lines of "How do you do a three-table join in MySQL?", asking or answering a specific homework question like "How do you do question number 3?" is NEVER acceptable.
- All exams are open book and open note. HOWEVER, all answers must be your own original work. Copying material online or from other sources, whether paraphrased or direct quotation, is prohibited, and will earn you at minimum a failing grade on the examination in question.

Communicating with Your Instructor

Please use the Inbox messaging system and emails work fine too. It is best to get out in front of things and start your work before the weekend.

Learning Outcomes Assessment:

- **Homework (32.5% total)**
 - SQL HW1 - Basic select statement - 3%
 - SQL HW2 - Advanced single-table select - 3%
 - SQL HW3 - DDL and DML - 3%
 - SQL HW4 - Multi-table selects - 5%
 - SQL HW5 - Aggregation and other advanced queries - 5%
 - ERD HW - 5%
 - Translation HW - 6%
 - Normalization HW - 2.5%
- **Midterm - 15%**
- **Final Examination - 15%**
- **Term Project (37.5% total):**
 - Term Project Part I - ERD 12.5%
 - Term Project Part II - Relational Schema - 12.5%
 - Term Project Part III - SQL Implementation - 12.5%

With the exception of the term project, which is to be completed in small groups, all work for the class is to be completed independently. While I encourage you to help one another out, that help must NOT be related to specific answers on homeworks or exams, which are to be completed independently. To collaborate on homework or exams is a violation of academic integrity, will earn you a 0 for the assignment in question and possibly for the course, and will be reported to the college administration.











College Policies and Procedures:





Click here for policies concerning Disability Accommodations, Academic Honesty, Netiquette, Attendance and Participation, Faculty Response Time, Grading , and Class Cancellation -

<http://www.peirce.edu/syllabuspolicies/>  (<http://www.peirce.edu/syllabuspolicies/>)

----- syllabus subject to change -----

Course Summary:

Date	Details	Due
Sun Sep 11, 2022	 Assignment 0 - Install & Configure MySQL (https://peirce.instructure.com/courses/6554/assignments/155441)	due by 11:59pm
Mon Sep 12, 2022	 SQL HW1 (https://peirce.instructure.com/courses/6554/assignments/155444)	due by 11:59pm
Mon Sep 19, 2022	 SQL HW2 (https://peirce.instructure.com/courses/6554/assignments/155445)	due by 11:59pm
Mon Sep 26, 2022	 Entity-Relationship Diagramming (ERD) Homework (https://peirce.instructure.com/courses/6554/assignments/155442)	due by 11:59pm
	 SQL HW3 (https://peirce.instructure.com/courses/6554/assignments/155446)	due by 11:59pm
Mon Oct 3, 2022	 Midterm Exam (https://peirce.instructure.com/courses/6554/assignments/155439)	due by 11:59pm
	 Translation Homework (https://peirce.instructure.com/courses/6554/assignments/155452)	due by 11:59pm
Fri Oct 7, 2022	 Term Project 2019 Part I - ERD (https://peirce.instructure.com/courses/6554/assignments/155449)	due by 11:59pm
Mon Oct 10, 2022	 SQL HW4 (https://peirce.instructure.com/courses/6554/assignments/155447)	due by 11:59pm
Fri Oct 14, 2022	 Term Project 2019 Part II - Relational Schema	due by 11:59pm

Date	Details	Due
	https://peirce.instructure.com/courses/6554/assignments/155451	
Mon Oct 17, 2022	 Normalization Homework (https://peirce.instructure.com/courses/6554/assignments/155443)	due by 11:59pm
Fri Oct 21, 2022	 Term Project 2019 Part III - SQL Implementation (https://peirce.instructure.com/courses/6554/assignments/155450)	due by 11:59pm
Mon Oct 24, 2022	 SQL HW5 (https://peirce.instructure.com/courses/6554/assignments/155448)	due by 11:59pm
Mon Oct 31, 2022	 Final Exam (https://peirce.instructure.com/courses/6554/assignments/155440)	due by 11:59pm