Course Syllabus

Jump to Today ✎ Edit

Course Introduction | Course Schedule | Late Policies | Grading Policies | Tools for this course

Where to go for help? (Comm. Policies & Methods)

Some links in this tab are only accessible to registered students.

A PDF copy of this syllabus is available at **syllabus.pdf**

About

In this class you will have the opportunity to learn the basic skills needed to

1. design and implement a simple to moderately complex database,
2. make good decisions regarding database design, and
3. document your design and queries in standardized notation.

Additionally, you will have the opportunity to practice these skills by building a simple website driven by a database backend.

Measurable Student Learning Outcomes:

At the completion of the course, students will be able to…
1. Describe the difference between a relational database and a flat file (Level 1; ABET Outcomes: A, j)
2. Model a moderately complex data set by using an ER or UML diagram, and derive a relational schema from that diagram (Level 3; ABET Outcomes: A, b, C)
3. Create a relational database from a relational schema (Level 4; ABET Outcomes: A, K, c)
4. Create multiple indices in a relational database, and explain when and why such indices are appropriate (Level 5; ABET Outcomes: A, b, C)
5. Formulate SQL statements for data manipulation (Level 4; ABET Outcomes: A, c)
6. Formulate simple queries in relational algebra by using projection, selection, product, and join operations (Level 3; ABET Outcomes: A, I)
7. Describe the components and interfaces of a Web-based database system (Level 1; ABET Outcomes: A, B, I)
8. Design and implement a Web-based relational database system, using one or more scripting languages (e.g., PHP) and an open-source database development system (e.g., MySQL) (Level 4; ABET Outcomes: a, B, C, I, K)

Recommended books

Relational Database Design and Implementation by Jan L Harrington, 2016 Edition is the recommended textbook for CS340-400.
A rough mapping of the current weeks to the chapters of the book is given below

- Chapters 1,3 -- Week 1
- Chapters 4-5 -- Weeks 2-3
- Chapter 10,16-17, 19 -- Week 4
- Chapter 11 -- Week 5
- Chapters 7, 13-15 -- Week 6
- Chapter 6 -- Week 7

This book is available for free *online* for all the OSU students at the **OSU Library** **(https://alliance-primo.hosted.exlibrisgroup.com/primo-explore/fulldisplay?docid=CP71248352730001451&context=L&vid=OSU)**

If you decide to use Python for web development in this course, the **Flask user guide** **(http://flask.pocoo.org/docs/1.0/)** should be good enough.

If you decide to use node.js for web development in this course, recommended books from CS 290 should suffice.

Course Content

This course is dedicated to learning the basics of database design and use.

To accomplish this, along with 4 assignments you will work in groups on a term Project implementing the concepts that you learn each week.

There will also be small quizzes which will help you assess your own understanding of the material. With few exceptions, if you ever get a wrong answer on a quiz that means you are not understanding critical information and it is your responsibility to get clarification. I hope you will not hesitate to ask a question on Piazza if this happens!

All the content, assignments, quizzes and project steps will be available in weekly Modules.

Expectations from Student

Prior Knowledge

Students are expected to know the following:

You should be familiar with good coding practices. Good coding style is required and not taught in this class. You should understand basic control structures. If you are unable to code a simple sorting algorithm, you will have trouble in this class as this level of coding experience is expected.

You should also have completed 290 or be a strong student currently taking the course. It is possible to take these two courses at the same time. but if you run into difficulty in 290 you can have some real trouble late in this course.

so do that with some caution.

Code quality

Code must be clear and you must understand what it is doing. Having well-documented code is going to be extremely important. I or the TA may not know the platform you are using, so it is your responsibility to make sure that your work is clear enough so that we can follow what is happening.

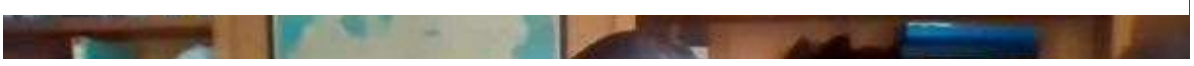
You should also have no major errors in your program. If we can manage to get the program to throw some default error message that is usually a major issue. Errors which you handle via a clear message to the user (e.g. 'Please enter only numbers in the age field') are usually fine. On the other hand, error messages like 'Error 0x00001: Null pointer to Null found, expected pointer to Int Factory Factory' are not.

When possible, you should find a style guide and conform to it.

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the **Student Conduct Code. (https://studentlife.oregonstate.edu/studentconduct)** Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

About the Instructors



Hi, I am Danielle Safonte and will be your instructor this term. I am teaching this course with fellow instructor and computer scientist Michael Curry. Catch us on Teams and Piazza!

I live on the east coast in New Jersey, recently moved from Brooklyn, NY. I have been a professor both for on campus courses and online courses at NYC College of Technology and Brooklyn College for many years now.

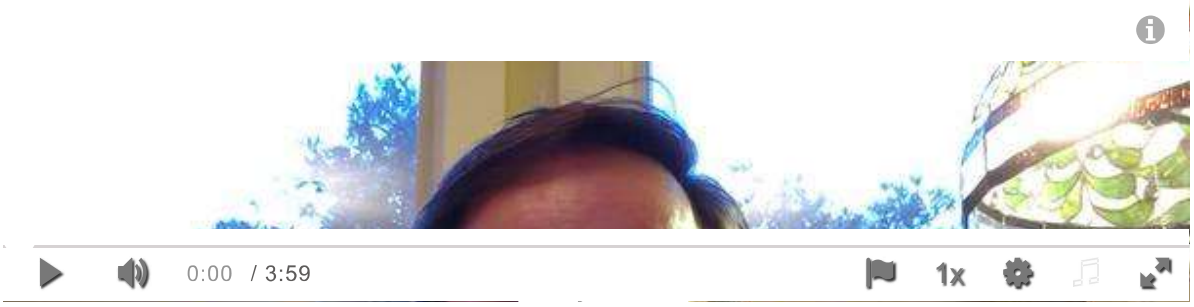
My undergraduate education was based in Business Information Technology Systems and Software Engineering obtained at the City College of NY. My Masters education was focused in Information Systems and Databases, obtained online in a program similar to this. As both a professor and a student in online education, I hope to bring an enjoyable, informative distance learning experience.

I started in the technology field working for the City University of NY as a lab technician and worked my way up while continuing my education to the Director of Technology and Database Administrator for some select departments in the college. I have created databases from scratch as well as worked with boxed software for customized database and analytic tools.

Through my almost 10 years of creating user manuals and holding training courses, I decided to take on a couple classes to teach. Little did I know a couple short years later, teaching became my main focus. I enjoy bringing real world knowledge into my courses to prepare you for a successful career ahead. I also freelance with a publisher to creating course content for online education. We have a variety of clients including Universities to large corporations, who look for training materials and courses just like this one.

I want you all to take away the most you can from this course. The only silly questions are the ones you walk away with never inquiring for an answer. If you are having a hard time or are unsure of something, please just ask! I am available through Teams, Piazza, email and through Zoom. (**safonted@oregonstate.edu (mailto:safonted@oregonstate.edu)**)

In my spare time, I enjoy traveling and spending time with my family. I look forward to connecting with you all and starting this learning journey with you.



Hi, I am Dr. Michael Curry and will be your instructor this term. I am teaching this course with fellow instructor and Database expert Danielle Safonte. Catch her on Microsoft Teams and Piazza!

I live in Portland Oregon area and have been a professor on campus at Oregon State and now online.

I didn't plan to become a computer scientist, but maybe like you I had a bit of a knack for it and kind of enjoyed doing things that required writing little programs. After college I was a telecommunications officer in the US Army and really didn't write code, but later I went to graduate school and got a job as a software engineer. I initially wrote software for embedded systems but what I didn't like about that was how hard it was to update an embedded system.

So instead I started writing software for the web and I have always liked the interactive nature of the web and especially how easily the code can be updated on the server. I enjoyed it so much I started my own company in 2003 and over the next 12 years worked with over 100 different businesses which was really rewarding to help my clients by writing web software, managing their data and solving problems.

I have been working with databases and writing web code for over 15 years, but importantly for you I have also been fortunate enough to teach this material to students such as yourselves for over 10 years too. And I really

enjoy helping others learn. In fact my motto is “when you learn I win”. So if you’re stuck and having difficulty then I am losing! So don't hesitate to reach out to me in Teams, Piazza or by email.
(*note we are shifting from Slack to Teams this term, our class communication will be on Teams)

Outside of work, I am an avid rock climber and love being outdoors. I look forward to connecting with you and helping you learn this term.

Student Evaluation of Courses

The online Student Evaluation of Teaching system opens to students during the week before finals and closes the Monday following the end of finals. Students receive notification, instructions and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the online learning experience for future students. Responses are anonymous (unless a student chooses to “sign” their comments, agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.

Week	Topic & Content	Due Mon	Due Thurs
1	Intro/Tools		(Syllabus Quiz)
2	Relational DB & Design	Task 0 Quiz 1	Step 0 Assignment 0
3	Models, Diagrams, Schemas	Project Step 1 Final (Proposal and Outline)	
4	SQL (DML)	Project Step 2 Draft (ERD Schema) Quiz 2	Project Step 2 Review
5	SQL, Advanced DML, DDL	Project Step 2 Final (ERD Schema) Quiz 3	Advanced SQL Assignm
6	ER to DDL	Project Step 3 Draft (HTML Interface) Quiz 4	Project Step 3 Review
7	Relational Algebra	Project Step 3 Final (HTML Interface) Quiz 5	Transactions EC
8	Project, ORMs	Project Step 4 Draft (DML + DDL)	Project Step 4 Review Relational Algebra Assig

9	Non-relational Databases, Stored Procedures, and Triggers	Project Step 5(CREATE + READ) Draft	Project Step 5 Review
10	Dead Week	Project Step 6(CREATE + READ) Draft	Project Step 6 Review
(11)	Finals Week	Reflection EC	Project Step 7 FINAL fin

Course Summary:

Date	Details	
Sun Sep 27, 2020	Quiz 0: Syllabus Quiz (https://canvas.oregonstate.edu/courses/1784208/assignments/8023982)	due by 11:59pm
	Assignment 0: Access and Use the CS340 Database (https://canvas.oregonstate.edu/courses/1784208/assignments/8023990)	due by 11:59pm
	Project Step 0: Connect webapp to database (Individual) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023994)	due by 11:59pm
	Task 0: Form your Project Group (https://canvas.oregonstate.edu/courses/1784208/assignments/8024011)	due by 11:59pm
Sun Oct 4, 2020	Project Step 1: Project Proposal and Outline (Group on Canvas) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023995)	due by 11:59pm
Thu Oct 8, 2020	Advanced SQL Assignment Part A (on GradeScope) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023988)	due by 11:59pm

Date	Details	
	Advanced SQL Assignment Part B (on GradeScope) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023989)	due by 11:59pm
Sun Oct 11, 2020	Quiz 1: Databases & ERD (https://canvas.oregonstate.edu/courses/1784208/assignments/8023983)	due by 11:59pm
Sun Oct 18, 2020	Quiz 2: Using ERD & Schema (https://canvas.oregonstate.edu/courses/1784208/assignments/8023985)	due by 11:59pm
	Project Step 2 Draft Version: ERD & Schema (Group / On Piazza) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023996)	due by 11:59pm
Sun Oct 25, 2020	Project Step 2 Final Version: ERD & Schema (Group / On Canvas) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023997)	due by 11:59pm
	Quiz 3: Basic SQL (On Gradescope) (https://canvas.oregonstate.edu/courses/1784208/assignments/8024009)	due by 11:59pm
Thu Oct 29, 2020	Project Step 2 Review (https://canvas.oregonstate.edu/courses/1784208/assignments/8023998)	due by 11:59pm
Sun Nov 1, 2020	Quiz 4 Advanced SQL (https://canvas.oregonstate.edu/courses/1784208/assignments/8023984)	due by 11:59pm
	Project Step 3 Draft Version: Design HTML Interface (Group / On Piazza) (https://canvas.oregonstate.edu/courses/1784208/assignments/8023999)	due by 11:59pm
Sun Nov 8, 2020	Project Step 3 Final Version: Design HTML Interface (Group / On Canvas) (https://canvas.oregonstate.edu/courses/1784208/assignments/8024000)	due by 11:59pm
Thu Nov 12, 2020	Project Step 3 Review (https://canvas.oregonstate.edu/courses/1784208/assignments/8024001)	due by 11:59pm

Date	Details	
Sun Nov 15, 2020	Project Step 4 Draft Version: DML and DDL Queries (Group on Piazza) (https://canvas.oregonstate.edu/courses/1784208/assignments/8024002)	due by 11:58pm
	Quiz 5: Relational Algebra Quiz (https://canvas.oregonstate.edu/courses/1784208/assignments/8023986)	due by 11:59pm
Thu Nov 19, 2020	Project Step 4 Review (https://canvas.oregonstate.edu/courses/1784208/assignments/8024003)	due by 11:59pm
	Relational Algebra Assignment (https://canvas.oregonstate.edu/courses/1784208/assignments/8024010)	due by 11:59pm
Sat Nov 21, 2020	Extra Credit: Transactions in databases (https://canvas.oregonstate.edu/courses/1784208/assignments/8023993)	due by 11:59pm
Sun Nov 22, 2020	Project Step 5 Draft Version: Implement CREATE + READ operations (Group on Piazza) (https://canvas.oregonstate.edu/courses/1784208/assignments/8024004)	due by 11:59pm
Thu Nov 26, 2020	Project Step 5 Review (https://canvas.oregonstate.edu/courses/1784208/assignments/8024005)	due by 11:59pm
Sun Nov 29, 2020	Project Step 6 Draft Version: Implement UPDATE and DELETE operations (https://canvas.oregonstate.edu/courses/1784208/assignments/8024006)	due by 11:59pm
Thu Dec 3, 2020	Project Step 6 Review (https://canvas.oregonstate.edu/courses/1784208/assignments/8024007)	due by 11:59pm
Sun Dec 6, 2020	Project Step 7 (Portfolio Assignment) (https://canvas.oregonstate.edu/courses/1784208/assignments/8024008)	due by 11:59pm
Thu Dec 10, 2020	Group Reflection on various teaching strategies used in CS340 (https://canvas.oregonstate.edu/courses/1784208/assignments/8023987)	due by 11:59pm

Date	Details
	Extra Credit: Software Usability Heuristics (https://canvas.oregonstate.edu/courses/1784208/assignments/8023992)