

CPSC 343

Database Theory and Practice

Topics

- introduction to relational databases
 - components of a database system
 - terminology
- query languages
 - SQL for data definition, queries, and data manipulation
- data modeling and database design
 - capturing and expressing the structure of the data
 - principles of good design
- database-driven applications
 - three-tier applications
 - interacting with a database from an application
 - views, stored routines, transactions
 - security issues
- DBMS internals and database tuning
 - understanding file structure, indexing, and query processing
 - improving DB performance

Course Website

<http://math.hws.edu/bridgeman/courses/343/f24/>

CPSC 343: Database Theory and Practice Fall 2024

Instructor [Stina Bridgeman](mailto:Stina.Bridgeman@hws.edu)
bridgeman@hws.edu
Lansing 302, x3614

Office Hours drop-in office hours: TBD, Lansing 302
office hours are also available by appointment if you cannot make the scheduled times ([schedule](#))

Class Hours and Meeting Place MWF 12:00-1:00pm — Napier 201

Course Links

- [Schedule](#) (the course schedule, including links to handouts, assignments, reading material, etc — pretty much everything you want on a daily basis is here)
- [Course Policies](#) (attendance, late/makeup work, extensions, academic integrity and collaboration, getting help, accommodations, etc — things you should read at the beginning of the semester, then refer back to as needed)
- [Course Information](#) (course description, textbook information, required materials and software, assignments and evaluation, etc — things you should look over at the beginning of the semester, but probably don't need too often after that)

Documentation and Reference Material

- [Using Linux at HWS](#) (lots of useful information about the Linux systems at HWS)

Office Hours

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- office hours are drop-in – no appointment necessary
 - held in Lansing 302
- 343-specific study session to be scheduled
- email questions and/or make an appointment if you can't attend office hours or the study session

Schedule Page

check here for readings, assignments, handouts, examples from class, etc

CPSC 343 Schedule

Unless otherwise noted, **daily lessons** are to be completed by 10pm the night before the class period where they are listed. Things in light gray have not been assigned yet; they are listed for planning purposes and dates may shift slightly.

Assignments

Week 1: 8/26-8/30

Topics: course introduction and preliminaries; information management concepts, database systems, relational databases; SQL - simple queries, set operations, subqueries

Mon	modules (to be posted)	←
	preliminaries due Fri 8/30	←
	software setup due Wed 8/28	←
Wed	Daily lesson: SQL — basics (to be posted)	←
	Reference: MySQL SELECT syntax	

homework –

- daily lesson for Wednesday
- intro survey (to be completed this week)
- computer set up (for Wednesday)

Important Policies and Other Information

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page owned by: bridgeman@hws.edu

Course Mechanics

- daily lesson is due at 10pm the night before class
 - some reading or other material introducing a new topic
 - self-assessment “quiz” to uncover points that need further discussion – “graded” on completion, not correctness
- in class
 - typically a short lecture to start, reviewing the daily lesson and any tricky or confusing points
 - remaining time applying the material in small groups or as whole class
- after class
 - homework problems to try applying the material for yourself

if you have a laptop you can bring to class, please do so!
(set up with the necessary software)

Course Mechanics

- homework problems
 - graded on a four point scale
 - an additional point is possible for a correct, substantive, and unique reply to your post or someone else's
 - e.g. identify an error and explain the problem and how to correct it
 - e.g. compare and contrast a different approach
 - generally due two class periods after they are assigned, though late handins are accepted until a cutoff point for each unit
- exams
 - five in-class hour exams
 - two-hour final exam
 - dates are on the schedule page
- project
 - build a database-driven application, from database design and implementation to implementing the application itself
 - semester-long
 - deadlines are on the schedule page

Course Mechanics

- engagement and participation
 - learning isn't a passive activity; engagement is required
 - includes daily lessons, attendance, contributing to class, asking questions, and coming to study sessions and/or office hours

Expectations

- attend all scheduled class sessions
- ★ attend at least 5 hours of study sessions and/or office hours over the course of the semester
 - 5 hours = e.g. 1 hour study session every 3 weeks or a 20-minute office hours visit every week
- spend approx. 8 hours per week outside of class on reading, assignments, and studying
 - if you routinely spend less time, do more than the minimum practice
 - if you routinely spend more time and feel like you are stuck and not making progress, come to office hours

Etiquette

- arriving late, leaving early, and coming and going during class is distracting
 - please do your best to arrive on time, and to take care of any necessary business before or after class so you can stay for the whole period
 - let me know if you know in advance that you need to miss part or all of a class
- ensure that phones do not ring or generate audible notifications during class

Policies

- there is a steady workload
- late handins take away time for the next assignment and can quickly snowball into falling behind – a late handin or extension should be rare
- ★ if there are circumstances outside your control which are significantly impacting your ability to focus on academics for several days or more, reach out ASAP
- attendance – attending class should be a high priority
 - if you must miss class, check the schedule page for missed material and new assignments – it is your responsibility to catch up promptly
 - missing more than six classes will lower your participation grade
 - missing 4-6 classes will lower your participation grade unless you are proactive about communication, diligent about making up missed content, and more engaged in other aspects of the course
- late policy
 - daily lessons not accepted late, though an occasional handin after the deadline but before class won't directly impact your grade
 - homework problems accepted late only until the designated cutoff for that unit
 - project deadlines are structured for steady progress and opportunity for feedback – late handins will be accepted but may not be handed back as promptly
- extensions beyond the late handin window should be rare as there likely won't be time for practice and feedback before the next exam
 - no extensions for daily lessons, though full credit is possible even with an occasional missed or after class handin
- rescheduling exams – being in class on exam day should be a high priority
 - if you have an unavoidable conflict with the day of an exam, *notify me as soon as possible* and make arrangements *in advance*
 - a missed exam can only be made up after the fact in the class of a last-minute emergency that prevents you from attending class – notify me and make makeup arrangements as soon as possible

Being Successful

- exams count for a substantial portion of the final grade
 - take the homework and other practice problems seriously, and do enough of them (even more than the minimum) so that you are prepared for the exams
 - be careful not to rely too much on others
 - first attempt should always be just you and the course materials (reading, slides, examples, directly linked documentation)
 - see the full collaboration policy on the webpage
- stay on top of the material – things can pile up quickly
 - reach out if you are stuck, struggling with the material, or feeling overwhelmed
- utilize the study sessions and office hours
 - make an appointment if you can't make the scheduled times