

CSC343H1S 20241 (All Sections): Introduction to Databases

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 Edit

Welcome to CSC343H1! This course provides an Introduction to Databases, and prepares you for later study in the implementation of Database Management Systems.

The material posted on Quercus is required reading. It contains important information, including assignment handouts, the policy on missed work, links to the online discussion forum (Piazza), and announcements. You are responsible for all announcements made in lecture and on Quercus.

Note to Engineering students: This course operates under [Faculty of Arts and Science rules](https://artsci.calendar.utoronto.ca/term-work-tests-and-final-exams). (<https://artsci.calendar.utoronto.ca/term-work-tests-and-final-exams>)





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Contact Information

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Instructor	Jacqueline Smith	Akshay Bapat
Lectures	L0101/L2001: Mon/Wed/Fri 10-11am in BA1190	L5101/L2501: Wed 6-9pm in BA1190

	<p>L0201/L2101: Mon/Wed/Fri 12-1pm in MC254</p>	
	<p>L0301/L2201: Mon/Wed/Fri 2-3pm in BA1160</p>	
Office Hours	<p>Beginning Tuesday, January 16</p> <p>Tuesdays 1:30-2:30pm, on Zoom https://utoronto.zoom.us/j/89865966719 (passcode 112358)  https://utoronto.zoom.us/j/89865966719</p> <p>The schedule may change. Please see the calendar https://q.utoronto.ca/courses/337365/pages/office-hours for the most up to date information.</p>	<p>Beginning Thursday, January 18</p> <p>Thursdays 12-2pm, location TBA</p> <p>The schedule may change. Please see calendar https://q.utoronto.ca/courses/337365/pages/office-hours for the most up to date information.</p>
Email (for personal issues)	<p>csc343-2024-01@cs.toronto.edu (mailto:csc343-2024-01@cs.toronto.edu)</p>	
Discussion Board (for issues relevant to other students)	<p>Piazza. Find our class sign-up link at: https://piazza.com/utoronto.ca/winter2024/csc343h1s20241  https://piazza.com/utoronto.ca/winter2024/csc343h1s20241</p>	
MarkUs link	<p>https://markus.teach.cs.toronto.edu/2024-01/ (available after A1 is posted)  https://markus.teach.cs.toronto.edu/2024-01/</p>	
PCRS link	<p>https://pcrs.teach.cs.toronto.edu/csc343-2024-01/ (available by Thurs Jan 11)  https://pcrs.teach.cs.toronto.edu/csc343-2024-01/</p>	

Prerequisites

If you don't have the course prerequisites listed in the [calendar entry](#) (<https://fas.calendar.utoronto.ca/course/csc343h1>), the CS Undergraduate Office will contact you with a form to complete in order to request a prerequisite waiver. Waivers are not granted automatically; a decision is made based on whether or not we feel you are well prepared to succeed in the course. You should have alternate plans as backup if you are hoping to take CSC343 without the prerequisites and have not yet received a waiver.

Teaching style

CSC343 is "semi-inverted". You will learn some of the basic material on your own, outside of class time, and we will teach the more challenging material and demonstrate problem-solving in class. There will also regularly be activities that you participate in during class. Be prepared to get your gears turning! There is strong evidence, and our experience also shows, that active learning works better than passively listening to a lecture. We also think it's a lot more fun!

To prepare for these active classes, you will do weekly "prep" activities outside of class. These will involve learning some material on your own, through readings or videos, and practising things we've learned in class. They will always culminate in some small exercises that you hand in. These weekly activities are not intended to be greatly difficult or time consuming, but they will be pivotal in your learning.

Lecture recordings

We plan to record and post one section of the course each week. However, we find the sound quality on classroom recordings is poor. More importantly, reading/viewing recorded materials will provide a poorer experience than the live lecture. We hope you will choose to attend in person and participate, and if you have to miss a lecture, we encourage you to pause the video and do the exercises where noted. **Recordings are intended for occasional use.**

Course videos and materials belong to your instructor, the University, and/or other source, and are protected by copyright. In this course, you are permitted to download videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. In particular, do not sell course materials, or provide them to a person or company that is using them to make money (e.g. Chegg, CourseHero, Easy 4.0/Easy EDU, and other private tutoring companies).

Marking Scheme

Marking scheme

Lecture Preps	10%	10 Weekly lecture preparation activities, equally weighted. Completed through either PCRS or Quercus. Best 9 of 10*.	Due Mondays before 10am The first prep is due Monday, January 15
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Research surveys	1%	Earn 0.5% each by completing two surveys	Dates TBA in early February and early April; announcements will be sent
Assignment 1	8%	Relational Algebra	Due Thursday, February 1 by 4:00pm
Midterm	18%	In person; 1.5 hours	Wednesday, February 28 from 6-8pm
Assignment 2 warm-up	2%	SQL and embedding SQL in Python	Due Thursday, February 15 by 4:00pm
Assignment 2	8%	SQL and embedding SQL in Python	Due Thursday, March 7 by 4:00pm
Assignment 3	8%	Database Design	Due Thursday, April 4 by 4:00pm
Final exam	45%	In person ; three hours. You must get 40% or above on the final exam to pass the course; otherwise, your final course grade will be no higher than 47%.	TBA, during the Arts & Science final exam period.

* We drop the lowest mark from your Lecture Preps in case you have to miss one due to illness or other personal circumstances. See the section on Special Consideration for more details.

Getting Help

Discussion Board: for sharable questions

Please post your questions about the course material and assignments on our Piazza discussion board so that everyone can benefit from your questions. Feel free to answer other students' questions! Helping someone else learn is one of the most effective ways of deeply learning a subject.

We will monitor the discussion board regularly and answer as many questions as we can. It may take longer near due dates, so try to start assignments early in case you have questions.

Course email account: for personal matters

Please use the course email account, csc343-2024-01@cs.toronto.edu (<mailto:csc343-2024-01@cs.toronto.edu>), for personal matters such as missing course work due to illness.

Office hours: for everything

We welcome all kinds of conversations at instructor office hours. For example, if you are stuck on a problem and unable to make progress, or confused about a concept in the course, or having difficulty working effectively with your partner, please come to see us. We'd love to help! There will also be TA office hours closer to assignment due dates, specifically for help with those assignments.

Creating a Positive Learning Environment


We are committed to creating a respectful learning environment in computer science courses for all students and expect that you will adhere to the University of Toronto [Code of Student Conduct](http://www.viceprovoststudents.utoronto.ca/publicationsandpolicies/codeofstudentconduct.htm) (<http://www.viceprovoststudents.utoronto.ca/publicationsandpolicies/codeofstudentconduct.htm>). Please be mindful of how your behaviour influences the atmosphere in our learning community, not just in classes, but also in office hours, on our discussion board, and anywhere that you interact with other students and members of the department.

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

Textbook and other resources (Optional)

These resources are suggested to support your learning in the course.

- The textbook "A First Course in Database Systems" by Jeffrey D. Ullman and Jennifer Widom, 2008 (3rd Edition), available online from the [publisher](http://www.mypearsonstore.com/bookstore/product.asp?isbn=013600637X&id=PSED) (<http://www.mypearsonstore.com/bookstore/product.asp?isbn=013600637X&id=PSED>), [Chapters Indigo](http://www.chapters.indigo.ca/home/search/?keywords=A%20First%20Course%20in%20Database%20Systems&pageSize=12) (<http://www.chapters.indigo.ca/home/search/?keywords=A%20First%20Course%20in%20Database%20Systems&pageSize=12>), or [Amazon](http://www.amazon.ca/s/ref=nb_sb_ss_i_0_34?url=search-alias%3Daps&field-keywords=a+first+course+in+database+systems&x=0&y=0&sprefix=a+first+course+in+database+systems) (http://www.amazon.ca/s/ref=nb_sb_ss_i_0_34?url=search-alias%3Daps&field-keywords=a+first+course+in+database+systems&x=0&y=0&sprefix=a+first+course+in+database+systems). It is also available on two-hour loan at the Engineering Library in the Sandford Fleming Building. It may or may not be available at the UofT Bookstore at this time.
- Our course text also a subset of the book "Database Systems: The Complete Book" by Hector Garcia-Molina, Jeff Ullman, and Jennifer Widom. You may choose to get this book instead if you [prefer an eBook](https://www.pearson.com/en-ca/subject-catalog/p/database-systems-the-complete-book/P200000003515/9780133002010) (<https://www.pearson.com/en-ca/subject-catalog/p/database-systems-the-complete-book/P200000003515/9780133002010>) and/or if you intend to continue to study databases beyond this course. The chapters and page numbers line up exactly with "A First Course..."

- Jennifer Widom at Stanford University has several free mini-courses [available on edX](#)  (<https://www.edx.org/school/stanfordonline>) (search for "Widom").
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Working with a Partner

Preps: All weekly preps must be done individually.

Assignments: For the assignments (except the Assignment 2 Warm Up), you have the option of partnering with one other CSC343 student, and I encourage you to do so. If you choose to work with a partner, we expect that you are *working together on all parts of the assignment*. If you choose to work with a partner in another way, you are responsible for all issues that arise from splitting up the work.

You may choose your own partner, and it need not be the same person for each assignment. Your partner may come from any section of the course. Both partners will receive the same mark for joint assignments. Once you begin working on an assignment, you may not dissolve your partnership without my permission. The deadline for requesting this is 3 days before the original assignment due date.

If you choose to work with a partner for an assignment, you must declare your group on MarkUs. You should declare it as soon as your group is formed, and certainly well before the deadline. Groups cannot be declared once the original assignment due date has passed. Email the course account (csc343-2024-01@cs.toronto.edu (<mailto:csc343-2024-01@cs.toronto.edu>)) for help if you're having trouble forming a group.

Choose well: Before partnering, have a conversation about expectations and work habits. What mark are you aiming for on this assignment? Do you like to start early or are you a procrastinator? Do you typically work late at night or during business hours? Do your schedules allow for you to meet to work on the assignment? Sharing your answers and working out any differences is probably more important than comparing your technical backgrounds.


Working together: Working with a partner has the potential to lighten your workload and enhance your learning or to increase your workload and impair your learning, depending on how you work together. Remember that you are responsible for learning the course material underlying all parts of the assignments. Just dividing up the work can result in a less successful assignment, as you won't benefit from your partner's insights, and could lead to disaster on the tests, as you won't have become proficient in all aspects of the course. You will have the most success if you truly work together.

If a partner doesn't meet a commitment: Don't avoid talking with your partner in these situations. It doesn't have to be a conflict; you can start by asking what's happening with them, and work together on a resolution. If you need help, please come talk to us.

Course Policies

Late Assignments

There is a one-hour grace period for assignments. You may submit at any time during this period without penalty.

We recognize that unexpected problems, illness, and disability-related barriers sometimes make it difficult to submit assignments on time. For this reason, we are adopting a policy of radical generosity with respect to assignment submissions. You may request an extension of up to **four days** for an assignment submission by completing the [Special Consideration Request Form](#) 


<https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u>.


Notes:

- **MarkUs:** After making this request, the extension will automatically appear on MarkUs within two business days; please do not contact us if you don't see it right away.
- **Partner:** If you are working with a partner
 - You must create your group on MarkUs and make sure your partner has been invited **before requesting the extension**.
 - Only one partner needs to request the extension.
 - You may not dissolve your partnership after requesting an extension.
- **Deadline to request extension:** You may request this extension up to 4 days after the assignment due date. However, note that the extended time will be relative to the assignment deadline, not relative to when you request the extension.
- **Asking for a shorter than a longer extension:** If you initially request a shorter (e.g., 2-day extension), you can fill out the form again to request a longer extension. We will always use the most recent extension request you have submitted (for a total extension of up to 4 days after the assignment due date).
- **If you miss your extended deadline:** Any work submitted beyond whatever extension you received plus the one-hour grace period (even 1 second beyond) will not be graded.
- **Using this policy more than once:** You may make use of this policy on as many assignments as you require. However, if you submit extension requests for more than one assignment, we may reach out to connect you with campus supports to help you stay on track in the future (e.g. your college registrar).
- **If you get an extension and then fall ill:** If a student has been granted an extension of 4 days and then becomes ill on the extended deadline, no further extension will be given unless the student has been ill for more than 4 days and further documentation is provided.
- **If you have questions during the extension period:** Note that the course staff will be working around the regular assignment due date. This means fewer office hours and less attention to Piazza during the extension period.

While it may seem like a "no-brainer" to always request a four-day extension for each assignment, we strongly recommend not making this request lightly. We have designed your assignments so that they can be completed by their actual deadlines, and we believe that for the vast majority of students, meeting these deadlines is the best way to keep up with the course material. Please do not use this policy to simply shift the original deadline in your mind.

Longer Extensions


If you are registered with Accessibility Services and would like to request more than 4 days of extra time to complete an assignment, please fill out the [Special Consideration Request Form](https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u)  (<https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u>) before the original assignment deadline.

If you find yourself in a serious medical or emergency situation where a 4-day extension will not be sufficient, please fill out the [Special Consideration Request Form](https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u)  (<https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u>) before the original assignment due date. We may require further documentation or confirmation from your college registrar, and further extensions are not always granted. So, you should submit any partial work that you've completed before the original assignment due date. Please also complete an Absence Declaration on ACORN when appropriate, and send the notification to the course email address.

Late or Missed Preps

For weekly preps, **no late submissions will be accepted**, as their purpose is to prepare everyone for lecture. We allow you to count the best 9 of 10 Lecture Preps so that you are not penalized if you miss an exercise due to illness or other unexpected circumstances. Students who are ill for **more than one lecture prep**, can email the course email address to request special consideration on the weighting of their completed work. Special consideration will not be granted for students who have only missed one.

Missed Midterm

You may request special consideration if you missed the midterm due to illness or other extenuating circumstances by submitting the [Special Consideration Request Form](https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u)  (<https://forms.office.com/Pages/ResponsePage.aspx?id=JsKqeAMvTUuQN7RtVsVSEHAulOAPeDtGk49uDxemVOpURTdSMUpSSVc4VVUyN1AyWkpFMDVIOUJUMy4u>). You will be asked to provide additional information, and this will be reviewed by the course staff. You should also complete an Absence Declaration on ACORN when appropriate, and send the notification to the course email address. Special consideration is NOT always granted. If it is granted, the weight of your midterm will be transferred to the final exam.

Special Consideration

If you need to request special consideration (as described above), you will be required to affirm that you are abiding by the [Code of Behaviour on Academic Matters](http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf) (<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>), in particular that it is an offence

to engage in any form of cheating, academic dishonesty or misconduct, fraud or misrepresentation not herein otherwise described, in order to obtain academic credit or other academic advantage of any kind.

That is, you must confirm that you are truly experiencing an emergency, and acknowledge that to falsely claim so is an academic offence. Applying does not guarantee that you will be granted special consideration.

Please carefully read the policy above on late work before submitting a request.

IMPORTANT: Submit an request for special consideration as soon as possible. It is easier to resolve situations earlier rather than later. If your situation will affect your ability to complete coursework for more than a few days, or in multiple courses, we recommend you also talk to your Registrar -- they are very helpful in such situations.

Remark Requests

Mistakes sometimes happen when marking. If you feel there is an issue with the marking of your assignment or test, you may request that it be remarked. Remark requests are accepted for two weeks after the item is returned. Assignment remarks are submitted via MarkUs. See the announcement email for instructions on midterm remarks. You must give a specific reason for a remark request, referring to a possible error or omission by the marker. Remark requests without a specific reason will not be accepted.

We will respond to remark requests before the final grades are submitted at the end of the term. We aim to do these sooner, but it is not always possible.

Academic Integrity

The work you submit must be your own. It is an academic offence to copy someone else's work. This includes their code, their words, and even their ideas. Whether you copy or let someone else copy, it is an offence. Academic offences are taken very seriously, and penalties can go well beyond 0 on the piece of work.

At the same time, we want you to benefit from working with other students. You are welcome to work with other CSC343 students on learning and understanding course material. For example, you may work through examples that help you understand course material or a new technology, or help each other configure your system to run a supporting piece of software. You are also welcome to work with other CSC343 students on **learning and understanding** related to assignments, including:

- Understanding the handout
- Understanding the architecture of starter code
- Understanding specifications for a query, update or method
- Getting more familiar with Python (some Engineering students may not have learned this language)
- Learning an unfamiliar library (we'll be using `psycopg2`)
- Making connections to other course material or concepts
- Understanding error messages (without looking at the code)

However, other than between partners, *collaboration on assignment solutions is strictly forbidden*. For example, these are not allowed:

Working out the steps of a solution together

Drafting solution together

Understanding solution code generated by generative AI

Improving solution quality

Debugging (i.e., diagnosing the source of an error message or incorrect results)

Fixing code (i.e., changing the code to eliminate an error message or produce correct results)

The most certain way to protect yourself is not to discuss assignment solutions or the ideas behind them with students other than your partner. Certainly you must not let others see your assignment solutions, even in draft form, or even your rough work.

Be cautious with private tutors, as some cross the line and tell students the answers - and they routinely engage with multiple students who all end up submitting nearly identical work.

Using Generative AI

In this course, you are permitted to use generative artificial intelligence (AI) tools, including ChatGPT and GitHub Copilot, as learning aids. We strongly recommend that you focus your use of generative AI on the learning and understanding side. If you use generative AI at all, keep in mind that it may produce content which is incorrect or misleading, or inconsistent with the expectations of this course. In addition, these tools have not been vetted by the University of Toronto and might not meet University standards for privacy, intellectual property, security, accessibility, and records retention. We encourage you to review the privacy policy of any generative AI tool you plan to use, in particular, to understand how your interactions will be stored and used by the tool in the future.

If you use generative AI more specifically to help you *solve* course work, please keep in mind these additional, important points:

- We caution you to not rely on these tools to complete your coursework. Instead, we recommend treating generative AI as a supplementary tool only for exploration or for drafting content. Ultimately, you (and not any AI tool) are responsible for your own learning in this course, and for all the work you submit for credit. It is your responsibility to critically evaluate the content generated, and to regularly assess your own learning independent of generative AI tools. Over reliance on generative AI may give you a false sense of how much you've actually learned, which can lead to poor performance on the midterm test or final exam, in later courses, or in future work or studies after graduation.
- These tools may be subject to service interruptions, software modifications, and pricing changes during the semester. This is not sufficient reason to request an assignment extension.
- You will not be permitted to use generative AI on the midterm or final exam.

Accessibility Accommodations

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a

collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

Students with diverse learning styles and needs are welcome in this course. If you have a disability that may require accommodations, please feel free to [contact us \(mailto:csc343-2022-09@cs.toronto.edu\)](mailto:csc343-2022-09@cs.toronto.edu) and/or the St George Campus [Accessibility Services \(https://studentlife.utoronto.ca/department/accessibility-services/\)](https://studentlife.utoronto.ca/department/accessibility-services/) office.

Course Summary:

Date	Details	Due
Tue Nov 15, 2022	 Lecture Prep for Week 10 (https://q.utoronto.ca/courses/337365/assignments/1183315)	due by 1pm
Tue Nov 22, 2022	 Lecture Prep for Week 11 (https://q.utoronto.ca/courses/337365/assignments/1183314)	due by 1pm