Advanced Database Systems

Instructor: Mengchi Liu mengchi@scs.carleton.ca
Lectures: Thursday: 8:35AM - 11:25PM
Asynchronous online course on brightspace

Course Description:
The database field has experienced a rapid and incessant growth since the development of the relational databases. The progress in database systems and applications has produced a diverse landscape of specialized technology areas that have often become the exclusive domain of research specialists. This course provides a systematic introduction to and an in-depth study on several important developments in database systems, especially

1. Nested relational databases
2. Object-oriented database
3. Object-relational databases
4. XML databases
5. INM databases
6. NoSQL databases

Prerequisites:
An introductory course on database systems

Course Information
All important information, such as announcements, assignments, midterm solutions, etc. will be available on brightspace. It is the student's responsibility to check for new information.

Textbooks: (not required)
1. Complex Value Databases:
2. Object-Oriented Databases:
3. XML databases:
   An Introduction to XML and Web Technologies
   XQuery
   Priscilla Walmsley, O'Reilly, 2007.
4. NoSQL databases:
   Next Generation Databases: NoSQL, NewSQL, and Big Data
   Guy Harrison, Apress, 2015. (Available online)
Marking Scheme:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm (Feb 28 class time)</td>
<td>40%</td>
</tr>
<tr>
<td>Project</td>
<td>35%</td>
</tr>
</tbody>
</table>

Notes:

1. Assignments must be submitted to brightspace in order to be marked. Assignments are allowed to be submitted one day late with 10% penalty. After one day, no submission will be accepted. Never email any assignment to the instructor.
2. For the midterm exam, the Carleton University e-Proctoring system will be used, and requires the use of webcams, microphones, and smart phones.
3. Students must pass the midterm exam in order to pass the course.

University Policy on Cheating and Plagiarism

**Plagiarism** - As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas or work of others as one's own".

**Unauthorized Co-operation or Collaboration** Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

**Student Academic Integrity Policy** Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. The following are some examples of things you can or cannot do:

- You are not allowed to copy or edit any portion of another student's work such as code, diagram etc, nor from any websites, but you may use those from the course notes.
- You are not allowed to give your solution (or portions of it) to another student.
- You are not allowed to work on your assignment with other students, with friends, with parents, with relatives, etc.
- You are not allowed to post full or partial assignment solutions on discussion boards or websites such as facebook, etc.

You must work on every assignment on your own without collaboration with other students. If you need help, see a TA or the instructor. Your assignment will be compared with others in the course and if you are believed to be involved in a plagiarism case in any way, the offence will be sent to the office of the Dean.

Information on Academic Accommodations

Requests for Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:
Pregnancy obligation
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit https://carleton.ca/equity/focus/discrimination-harassment/religious-spiritual-observances/.

Academic Accommodations for Students with Disabilities
If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Survivors of Sexual Violence
As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities
Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline