

# INSE 6180 Security and Privacy Implications of Data Mining (4 credits)

## 1. General Information

- INSE 6180: Security and Privacy Implications of Data Mining (4 credits)
- Monday and Wednesday: 6:30pm-9:00pm
- Benjamin Fung, *Ph.D., P.Eng.*, CIISE, ENCS, Concordia University
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- E-mail: [fung@ciise.concordia.ca](mailto:fung@ciise.concordia.ca)
- Office: EV7.628
- Office hour: Monday & Wednesday 5pm-6pm
- Course website: <http://www.ciise.concordia.ca/~fung/INSE6180>. The webpage will contain announcements related to the class, pointers to documents, class notes, project description, etc. The username and password required to access this page will be provided in class.

## 2. Course Description

- Data Mining is a collection of techniques for discovering hidden knowledge in the rapidly growing data in governments, businesses, sciences, internet, and other information sources. Many applications of data mining, however, pose security and privacy threats to the general public. This course studies the security issues caused by the advancement of data mining technologies. Students will develop skills that can be applied to advancing commerce, government, and science through the exploration of the concepts and techniques of data mining and practical exercises. We will also study privacy-preserving data publishing methods to support effective data mining. This course prepares students to be potential researchers and practitioners in the areas of data mining and privacy protection. Specifically, the course will include discussions and explanations of the following subjects: data warehouse and OLAP, association rules mining, classification analysis, cluster analysis, text mining, and privacy-preserving data publishing.
- Prerequisites: Basic knowledge of statistics and database management will help. Having some basic programming knowledge will be useful for the course project.

## 3. Tentative Schedule

- See course website.

## 4. Course Materials

- Required textbook: Data Mining: Concepts and Techniques, 3<sup>rd</sup> Edition, by Jiawei Han, Micheline Kamber, and Jian Pei, Morgan Kaufmann, 2012. ISBN 978-0-12-381479-1
- Lecture notes: Powerpoint slides provided by the instructor.

## 5. Assignments and Grading

- **Grading:**

1. Project progress report: 10%
2. Project presentation and report: 40%
3. Final exam: 50%

- **Details:**

1. Final Exam: The final exam will take place during the examination period at the end of the semester. Students should not make any specific arrangements to leave the city until the official final exam date is posted. There is no substitution to a missing exam, so students should make sure that they are available to write the exam at the scheduled time.
2. Project: The term project will require students to learn a data mining software called R (<http://www.rdatamining.com>) and utilize R to conduct some data analysis. The scope and topic of the data analysis is open, but it has to be approved by the instructor. Having some basic programming knowledge will help understand R. A student may choose to work **alone** or with **at most 1 partner**. Every member should sign the [Expectations of Originality form](#).

- **Final Grade:**

There is no pre-set mapping between number grades and letter grades. The mapping will be decided based on an assessment of difficulty level, class performance, and fairness. In other words, there is no definite rule for translation of number grades to letter grades. Absenteeism, lack of preparation, and lack of effort will usually result in a failing grade. Plagiarism will not be tolerated in this course. The instructor will report every incident of plagiarism to the Dean's office. Students are required to pass the final exam in order to pass the course.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

## 6. Academic Code of Conduct

### **Academic Integrity**

Any form of cheating, plagiarism, personation, falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under the Academic Code of Conduct and **may lead to severe penalties up to and including suspension and expulsion.**

As examples only, you are not permitted to:

- Copy from anywhere without indicating where it came from
- Let another student copy your work and then submit it as his/her own
- Hand in the same assignment in more than one class
- Have unauthorized material or devices in an exam. Note that you do not have to be caught using them – just having them is an offence
- Copy from someone's else exam

- Communicate with another student during an exam
- Add or remove pages from an examination booklet or take the booklet out of an exam room
- Acquire exam or assignment answers or questions
- Write an exam for someone else or have someone write an exam for you
- Submit false documents such as medical notes or student records
- Falsify data or research results

You are subject to the Academic Code of Conduct. Take the time to learn more at <http://provost.concordia.ca/academicintegrity/>

## 7. Student's Responsibilities

- Students are expected to attend every class. Some material may only be covered in class and not made available on the course website. Students are expected to read the assigned materials and to actively participate in class discussions.
- Students are expected to be respectful of other people's opinions and to express their own views in a calm and reasonable way. Disruptive behaviour will not be tolerated.
- Students are expected to be familiar with the Code of Rights and Responsibilities: <http://rights.concordia.ca>
- If you cannot attend class for any reason, unforeseen or not, you should talk or write to me as soon as possible.

## 8. Student Services

- **Concordia Counselling and Development** offers career services, psychological services, student learning services, etc. <http://cdev.concordia.ca>
- **The Concordia Library Citation and Cycle Guides:** <http://library.concordia.ca/help/howto/citations.html>
- **Advocacy and Support Services:** <http://supportservices.concordia.ca>
- **Student Transition Centre:** <http://stc.concordia.ca>
- **New Student Program:** <http://newstudent.concordia.ca>
- **Office for Students with Disabilities:** <http://supportservices.concordia.ca/disabilities/>
- **The Academic Integrity Website:** <http://provost.concordia.ca/academicintegrity/>