



The
knowledge
to compete

BUSI 3400 A
Data and Information Management
Fall 2016

Instructor: Mike Hine, Ph.D.

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Office Hours: By appointment

Class Room: Residence Commons 214
Class Dates: Thursdays, 8:35-11:25 AM
Tutorials: Wednesdays, 8:35-9:25 AM; 9:35-10:25 AM
TA: TBD

Prerequisites

BUSI 2400 with a grade of C or higher.

The School of Business enforces all prerequisites.

Course Calendar Description

Information management, database administration, Entity-Relationship Model, database development life cycle: planning, analysis, design, implementation, and maintenance of database management systems. Construction of a database. Introduction to SQL, distributed databases, object-oriented databases, and data warehousing.

Precludes additional credit for COMP 3005.

Data and Information Management

This course provides students with an introduction to the core concepts in data and information management. It is centered on the core skills of: identifying organizational information requirements; modelling said requirements using conceptual data modelling techniques; converting the conceptual data models into relational data models and verifying the model's structural characteristics with normalization techniques; and implementing and utilizing a relational database using a scalable database management

system. The course will also include coverage of basic database administration tasks. In addition to developing database applications, the course helps the students understand how large-scale packaged systems are highly dependent on the use of DBMS. Building on the transactional database understanding, the course also provides an introduction to data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella.

Learning Objectives

Students are expected to:

1. Understand the role of databases in managing organizational data and information.
2. Understand the historical development of database management systems and logical data models.
3. Understand the role of information requirements specification processes in the broader systems analysis & design context.
4. Use Entity-Relationship (ER) modelling to capture the information requirements for an enterprise domain.
5. Understand the link between data/information modelling and process modelling.
6. Produce high-quality relational database designs.
7. Understand the purpose of normalization and the first three normal forms (NF's).
8. Implement a relational database design using an appropriate DBMS, including the principles of data type selection and indexing.
9. Use the data definition (DDL), data manipulation (DML), and data control language components of Transact-SQL language.
10. Perform some simple database administration tasks.
11. Learn the concept of database transaction and apply it appropriately to an application context.
12. Understand how to access relational databases from various types of applications.
13. Understand the role of databases and database management systems in the context of enterprise systems
14. Understand the difference between On-line Transaction Processing (OLTP) and On-line Analytic Processing (OLAP).
15. Understand concepts of business intelligence, data warehousing and data mining.
16. Brief introduction to Big data concepts

Required Materials

Coronel, C. & Morris, S. (2017). Database Systems: Design, Implementation and Management, 12th Edition.

Course webpage: **cuLearn**

Tentative Course Schedule

The following schedule may be changed at the discretion of the instructor.

Session	Date	Topic / Important Deadlines	Chapter / Readings
0	Sept 8 th	No Class	
1	Sept 15	Course Administration – Introduction – Database Concepts I	Ch 01
2	Sept. 22	Database Concepts II: Data Models Discuss database project requirements	Ch 02
3	Sept 29	Design Concepts I: The Relational Database Model	Ch 03
4	Oct 6	Design Concepts II: Entity Relationship (ER) Modelling	Ch 04
5	Oct 13	Design Concepts III: Advanced Data Modelling Submit database project concept for approval (1 page)	Ch 05
6	Oct 20	Design Concepts IV: Normalization of Database Tables	Ch 06
		Study Break – Oct 24 – 28	
7	Nov 3	In class Midterm Exam Submit preliminary ER diagram for database project	
8	Nov 10	Advanced Design and Implementation I: SQL– Assignment 01 Due	Ch 07
9	Nov 17	Advanced Design and Implementation II: Advanced SQL and Database Design	Ch 08
10	Nov 24	Advanced Design and Implementation II: Database Design. Advanced Database Concepts I: Transaction Mgmt and Concurrency Control Assignment 02 due	Ch 09 & Ch 10
11	Dec 1	Advanced Database Concepts II: Business Intelligence and Data Warehouses Advanced Database Concepts III: Database Connectivity and the Internet	Ch 13 & Ch 15
12	Dec 8	Database project write-up due at the beginning of class Database project group presentations	

Group Database Project

Students will work in teams of 4-5 (max) to present a realistic database driven solution for a real life business. The project must cover all the steps in the database development life cycle and must take into account the current and future business requirements and address in tangible terms how the implementation of the new system will be beneficial to the business in terms of improved effectiveness and efficiency. Students are required to make use of all the techniques that they will learn while taking the course. **More detailed project explanation and instructions will be provided during Session 2.**

The last class will be used to present the database project to the class. All group members must be present and should participate actively in the presentation. Presentation must be delivered using Powerpoint and must include a working application that must be demonstrated to the class.

Please note that the group project is peer-evaluated. Your mark will be calculated as a function of the mark received by the group. E.g. if your peer evaluation by the rest of your group assigned you a score of 80% for participation then you will receive only 80% of your group's mark. **Peer evaluation ratings are mandatory** and a group mark will not be released until each group member has provided his or her peer evaluation. **Students are expected to resolve any issues within the team first.** If there are issues that cannot be resolved, **bring it to my attention early.** I recommend that teams meet regularly, take attendance and assign work equally.

Individual Assignments

Over the course of the term, the instructor will provide two assignments. Students will be required to hand in their assignments according to the schedule provided above. This is supposed to be individual effort so **DO NOT COPY FROM EACH OTHER AS YOU WILL LEARN NOTHING AND WILL FAIL ON YOUR FINAL EXAM.** All assignments must be submitted in soft copy through WebCT. Please also provide a paper copy as it is easier for me to mark.

Labs

Lab topics and schedule is TBA. Make sure to attend the session you are signed up for as there is limited seating. The TA will run the lab, solve problems and provide guidance and answer course related questions. They are important so please attend them.

Evaluation

Your final grade will be composed of the following:

40% Final Exam
20% Midterm Exam *
20% Group Project
20% Assignments

**Midterm exam is held in class.*

Students must hand in all assignments / project to obtain a passing grade in this course.

- Assignments are due at the beginning of the class.
- Late assignments will be penalized 20% per day

Students who miss the midterm examination shall be required to provide medical certification (for illness) to be considered for a re-scheduled examination.

The final exam will be held during the regular examination period. **Students must obtain a passing grade on the weighted average of the midterm and final exam in order to gain credit for this course.**

ADDITIONAL INFORMATION

Course Sharing Websites

Student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

Required calculator in BUSI course examinations

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

Group work

The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

WDN = Withdrawn from the course

ABS = Student absent from final exam

DEF = Deferred (See above)

FND = (Failed, no Deferred) = Student could not pass the course even with 100% on final exam

Academic Regulations, Accommodations, Etc.

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Requests for Academic Accommodations

For Students with Disabilities:

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your **Letter of Accommodation** at the beginning of the term, and 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 me to ensure accommodation arrangements are appropriate and can be made. The deadlines for contacting the Paul Menton Centre regarding accommodations for December exams is November 11, 2016.

For Religious Obligations:

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.

Students and instructors can confirm accommodation eligibility of a religious event or practice by referring to the Equity Services website (<http://carleton.ca/equity/accommodation/religious-observances/>) for a list of holy days and Carleton's Academic Accommodation policies. If there are any questions on the part of the student or instructor, they can be directed to an Equity Services Advisor in the Equity Services Department for assistance.

For Pregnancy:

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a letter of accommodation. The student must then make an appointment to

discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

Academic Integrity

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another’s ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include; a grade of Failure in the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at:

<http://carleton.ca/studentaffairs/academic-integrity>.

Sprott Student Services

The Sprott student services office, located in 710 Dunton Tower, offers academic advising, study skills advising, and overall academic success support. If you’re having a difficult time with this course or others, or just need some guidance on how to successfully complete your Sprott degree, please drop in any weekday between 8:30am and 4:30pm. Our advisors are happy to discuss grades, course selection, tutoring, concentrations, and will ensure that you get connected with the resources you need to succeed! <http://sprott.carleton.ca/students/undergraduate/support-services/>

Be in the know with what’s happening at Sprott: Follow @SprottStudents and find us on Facebook SprottStudents Sprott.

Important Information:

- Students must always retain a hard copy of all work that is submitted.
 - All final grades are subject to the Dean’s approval.
 - For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, it would be easier to respond to your inquiries if you would send all email from your Carleton account. If you do not have or have yet to activate this account, you may wish to do so by visiting <http://carleton.ca/ccs/students/>
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