



**Dalhousie University**  
**Faculty of Computer Science**

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# CSCI 2141

## Intro to Database Systems

### Introduction

# About Myself – Academic

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- Dr. Khurram Aziz
  - PhD Electrical Engineering (with Distinction)
    - Vienna University of Technology (TUW), Austria, 2008
    - Topic: Queueing Analysis of Network Edge Nodes Based on Multi-dimensional State Diagrams.
  - MSc Electrical Engineering
    - National University of Singapore (NUS), 2002
  - BSc (Hons) Electrical Engineering (Telecom)
    - University of Engineering & Technology (UET), Lahore, 1997

# About Myself – Professional

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- Softech Systems Pvt. Ltd., Lahore
  - 1998 – 2000 (Software Engineer / Senior SE)
- NetSol Technologies, Lahore
  - 2000 (Senior Software Engineer / Project Lead)
- Fujitsu Singapore Pte. Ltd., Singapore
  - Consultant Software Engineer (2000 – 2001)
- Mobiwave Pte. Ltd., Singapore
  - Senior Engineer (2001 – 2002)
- Yaku Consulting Ltd., Newmarket, ON, Canada
  - Business Process Specialist (2016)

# About Myself – Academic

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- NUST School of Electrical Engineering & Computer Science (SEECs), Islamabad, Pakistan
  - Assistant Professor (2008 – 2011)
  - HoD Communication Systems Engineering & Electrical Engineering (2009 – 2011)
- City University, London, UK
  - Visiting Academic (2013)
- COMSATS Institute of Information Technology (CIIT), Abbottabad/Islamabad, Pakistan
  - Assistant Professor (2011 – 2016)
- Dalhousie University, Halifax, NS
  - Instructor (2016 – present)

# Course Take Away

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- What do you want to be your take away from this course?

# Which of these activities have you done?

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- Performed a google search
- Used social media applications
  - Facebook
  - Twitter
  - LinkedIn
  - Whatsapp
  - Instagram
  - Skype
- Played an online game
- Shopped online
- Used online maps (google or other)
- Read an online article or blog or newspaper
  
- Does any of the above applications that you used have databases?

# Database Systems

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- If you have used any of the previously listed applications, you have interacted with databases
- These databases may store
  - User accounts and login information
  - Your personal details
  - Application specific data
  - Inventory details
  - Information about places (try search ... near me on maps)
  - ... other data?

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# Course Information and Syllabus



# Course Outline\*

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- Database Systems
  - What are database systems and why they are needed?
  - Shortcomings in file systems
- Data Modelling
  - Business rules
  - Translating business rules to data model components
  - Conceptual, logical and physical data models
- Relational Database Models
  - Relational algebra
  - Relationships in relational databases

\* May be subject to minor changes

# Course Outline

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- Entity Relationship Modelling
  - Developing an ER diagram
- Normalization of Database Tables
  - Normal forms
  - Normalization process
- Structured Query Language
  - Data definition language
  - Data manipulation language
  - Advanced SQL

# Course Outline<sup>#</sup>

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- Database Design
  - Systems Development Life Cycle
  - Database Life Cycle
- Intro to Advanced Database Concepts
  - Database Administration and Security
  - Database Connectivity
  - Data Warehouses

<sup>#</sup> If time permits, we will cover one or more of these topics

# Text and References

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- Textbook
  - "Database Systems – Design, Implementation, and Management", 12e, by Carlos Coronel and Steven Morris, ISBN-13: 978-1-305-62748-2.
- MindTap is compulsory
  - I suggest buying MindTap and the loose-leaf edition of the book (~\$130)
  - Mindtap will be used for assignments
- Lecture slides and additional course material will be available on the course website on Brightspace as and when required.

# From the Publisher

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**PURCHASE OPTIONS:** (Prices provided by publisher and may change)

**# 1) Mindtap + printed book Loose Leaf Edition**

**1337129992 CORONEL: BNDL: LLF DATABASE MANAGEMENT 12th edition \$129.95  
(Purchased via Bookstore)**

Contains:

1305866797	LLF DATABASE MANAGEM <b>(LLF means Leaf Loose edition)</b>
1305877918	PAC LMS INTG MT DATA

**# 2) Mindtap only:**

1305877918 PAC LMS INTG MT DATABASE SYSTEMS 6months \$ 99.95 ( **Students can purchase at the bookstore**)

130587790X EPIN LMS INTG MT DATABASE SYSTEMS 6months \$ 99.95 ( **Students can purchase ONLINE ONLY**)

**# 3) Mindtap + Printed Book:**

**1337192368 CORONEL/MORRIS : BNDL: DATABASE SYSTEMS \$ 219.95 ( This is the regular book purchased via bookstore)**

# Lab Sessions

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- Lab sessions are mandatory
  - When? → Mon 15:35-16:55, Tue 08:35-09:55
  - Where? → Rooms 143, 133 and 134
    - Students with own laptops, please register for Room 134
- Please register for any one of these within this week
- These sessions will be used for:
  - Exploring SQL commands in more detail
  - Practicing what you learn in class
  - Completing labs assignments

# Evaluation Criteria

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- Quizzes (10%)
  - Five quizzes, best 4 would be considered
- Mindtap Assignments (20%)
  - Multiple attempts mostly available. Best one would be considered.
  - Late assignments will not be accepted/graded. No exceptions in this semester.
  - Start working on them early so that submission is not affected
- Labs (20%)
  - May have to be submitted either at the end of the lab session, or by end of day.
- Midterm Exam (10%)
  - To be held during class.
- Final Exam (40%)
  - The exam will be scheduled by the university.
  - The exam will cover all material in the course.

# Course Communications

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- Course announcements will be posted on the course web page on Brightspace.
  - It is the student's responsibility to check the course page on a regular basis.
- Facebook page has been created for discussions
  - Search for “CSCI2141 – (Fall 2017) Intro to Database Systems” in Facebook
  - Use the following link:  
<https://www.facebook.com/groups/170967560136447/>



# Medical Absences/Sick Notes

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- If you are absent from class as a direct result of personal illness or distress
  - Complete the “Student Declaration of Absence” form
  - Upload it to the appropriate Dropbox within 3 calendar days following your absence.
- There will be no makeup quizzes or tests. The following rules will be applied if you submit the “student declaration of absence” within 3 calendar days:
  - **For missed quizzes/Lab assignments:** You will receive either the average of all your remaining quizzes, or the class average for that quiz, whichever is **lower**. Also note that you already have the option of missing one quiz as best 4 out of 5 will be considered.
  - **For missed mid-term:** The mid-term weightage will carry over to the Final exam, whose weightage in that case will be 50% instead of 40%.
- Note that the “Student Declaration of Absence” is **not valid for the final examination**

# Teaching Assistants

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- Mr. Muhammad Etemad  
Consultation\*: Wednesday 2:00 – 3:00 pm  
Location: Learning Centre  
Email: [Etemad@dal.ca](mailto:Etemad@dal.ca)
- Ms. Sarah Meng Li  
Consultation\*: Monday 10:00 – 11:00 pm  
Location: Learning Centre  
Email: [mn332990@dal.ca](mailto:mn332990@dal.ca)

# Work Hard and Best of Luck

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- Office location: 205, Goldberg CS building
- Lectures: Tue. & Thu. 14:35 - 15:55  
*Studley LSC-COMMON AREA C240*
- Office hours: T R, 11:00 – 12:00  
(or send me an email)
- E-mail: [kaziz@dal.ca](mailto:kaziz@dal.ca)