

# **COSC 671 – Advanced Topics in DBMS (Hybrid)**

## **Course Information**

### **Class meetings**

Tuesday 9:00 – 10:50 am on Zoom

Additional meetings on Thursday, Feb 25<sup>th</sup> & April 1<sup>st</sup>

### **Instructor**

Krish Narayanan

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Preferred form of address: Dr. Krish or Dr. Narayanan

### **Office hours**

Tuesday 11:00 – 1:00 pm

Wednesday 3:00 – 5:00 pm

Other office hours posted at <https://emunix.emich.edu/~knarayana/>

### **Prerequisites**

COSC 471 or COSC 571

### **Course summary**

An advanced course in databases. Students will have a good understanding of the following concepts by the end of this course:

- Transaction management & concurrency control
- Recovery techniques
- Query processing & optimization
- Advanced normalization
- Distributed databases
- NoSQL databases

### **Textbook**

Silberschatz, A., Korth, H., & Sudarshan, S. [Database System Concepts](#). Sixth edition. McGraw Hill, 2010.

### **References**

1. Elmasri, R. & Navathe, S. *Fundamentals of Database Systems*. Fifth edition. Addison Wesley.
2. Connolly, T. & Begg, C. *Database Systems – A Practical Approach to Design, Implementation, and Management*. Fifth edition. Addison Wesley.
3. Zaniolo, Carlo et al. *Advanced Database Systems*. Morgan Kaufmann.
4. Yu, Clement & Meng, Weiyi. *Principles of Database Query processing for Advanced Applications*. Morgan Kaufmann.
5. Elmagarmid, Ahmed. *Database Transaction Models for Advanced Applications*. Morgan Kauffman.
6. Widom, Jennifer & Ceri, Stefano. *Active Database Systems: Triggers & Rules for Advanced Database processing*. Morgan Kaufmann.
7. ACM Transactions on Database Systems
8. IEEE Knowledge & Data Engineering

9. ACM Special Interest Group on Management of Data (SIGMOD)
10. International Conference on Data Engineering (ICDE)
11. Very Large Database conference (VLDB)
12. Database and Expert Systems Applications conference (DEXA)

### Grading

Reading assignments	15%
Case Studies	5%
Project	20%
Research	25%
Tests (2)	30%
In-class activities	5% of final grade

\* Includes attendance and participation in classroom discussions/activities

### Grade Scale

93+ A, 90+ A-, 87+ B+, 83+ B, 80+ B-, 77+ C+, 73+ C, 70+ C-, <70 F

### General info

- All class materials will be posted on **Canvas** in a timely fashion.
- Any **urgent notifications** will be sent to your emich email and will be posted Canvas.
- Approach the instructor with your **feedback**, comments, and/or concerns about the course.
- **Reading assignments** will benefit in better understanding of the concepts discussed in the class and are strongly encouraged to be completed.
  - Hand-written (should be legible) or typed answers will be accepted. All answers should be included in one file. Multiple files including individual pages/answers will not be graded.
  - All assignments should be submitted to Canvas on or before the due date, by midnight. Late submissions for reading assignments will NOT be accepted.
- **Project & Research** deliverables should be submitted to Canvas on or before the due date, by midnight.
  - Submit a zipped folder for the project.
  - Research deliverables will be required to be submitted via [Turnitin.com](https://turnitin.com) with no more than 20% similarity.
  - Late submissions will be accepted with 25% penalty until two days after the due date. All other submissions will not be graded.
- Students are expected to save all **graded work** till the end of the semester. All concerns regarding grades will need to be backed up by graded work.
- **Make-ups** for tests will only be allowed for medical or emergency reasons. Please discuss options with the instructor ahead of time, if possible.
- Failure to take at least one of the two tests will result in a **'F' grade** for the course.
- Check EMU's Center for E-Learning website for technology requirements for the course. <https://www.emich.edu/elearning/support/index.php>. Make sure your computer is set up to work with Zoom, Canvas, and Respondus (lockdown browser for tests).
- Materials in this course, on the course-related websites or URLs used in connection with any university course is protected by **copyright** and may not be copied, used, linked, revised, or retained in any manner whatsoever without permission of its owner. The content of the copyrighted material may be used only, and solely by and for, students officially enrolled in this course for which the transmission is made, and may

not be copied, used, linked, revised, or retained in any form, or disseminated in any form or medium whatsoever without permission by an agent of EMU.

- **Academic dishonesty**, including all forms of cheating, falsification, and/or plagiarism will not be tolerated in this course. A student claiming other's work as his own work will receive a zero during the first attempt, with a warning. Failure to correct this behavior will result in an 'F' grade for the course. Further, the student will be referred to the Office of Ombuds for discipline that can result in either a suspension or permanent dismissal. The [\*Student Code of Conduct\*](#) contains detailed definitions of what constitutes as academic dishonesty, but if you are not sure about whether something you are doing would be considered academic dishonesty, consult with the instructor.

*The instructor has the right to modify this document during the semester as pedagogically necessary, with appropriate notification.*