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| **Week#** | **Dates** | **Topics** | **Notes** |
| 1 | 08/14/23 - 08/18/23 | Introduction to Database Systems and Database System Architectures | Ch. 1 |
| 2 | 08/21/23 - 08/25/23 | Data Storage | Ch.12 |
| 3 | 08/28/23 - 09/01/23 | File Store and Indexing | Ch.13, 14 |
| 4 | 09/04/23 - 09/08/23 | B Tree and B+ Tree | Ch.14 |
| 5 | 09/11/23 - 09/15/23 | Hashing | Ch.14 |
| 6 | 09/18/23 - 09/22/23 | Query Execution | Ch.15 |
| 7 | 09/25/23 - 09/29/23 | Query Optimization | Ch.16 |
| **8** | **10/02/23 - 10/06/23** | **Mid-Term Exam** |  |
| 9 | 10/09/23 - 10/13/23 | NoSQL Database (Graph Data model) |  |
| 10 | 10/16/23 - 10/20/23 | Transaction | Ch.17 |
| 11 | 10/23/23 - 10/27/23 | Concurrency Control | Ch.18 |
| 12 | 10/30/23 - 11/03/23 | Recovery System | Ch.19 |
| 13 | 11/06/23 - 11/10/23 | Performance Tuning | Ch. 25 |
| **14** | **11/13/23 - 11/17/23** | **Final Exam** |  |
| **15** | **11/20/23 - 11/24/23** | **Thanksgiving Break (No Class)** |  |
| 16 | 11/27/23 - 12/01/23 | Group Project Presentations (I) |  |
| 17 | 12/04/23 - 12/08/23 | Group Project Presentations (II) |  |

**Schedule:**

**Assessment: Total 500 points**

1. Written Assignments 100 points
2. Programming Assignments 100 points
3. Graduate Course Project 100 points
4. Mid Term Exam 100 points
5. Final Exam 100 points

**Notes:**

**Programming Assignments (100 points):**

1. Index File Processing
2. Query Parser and Compiler
3. MongoDB (NoSQL Database)
4. Neo4j (NoSQL Database)

**Written Assignments (100 points):**

1. Data Storage
2. B+ Tree
3. Hashing
4. Query Execution
5. Query Optimization
6. Transaction
7. Concurrency Control
8. Recover Systems

**Graduate Course Group Project (100 points-NoSQL Database Systems and Web based framework):**

**(Documents, Key Value, Column Family, and Graph data models)**

1. Group Name and Members (n <=4, n = number of members)
2. Project name
3. Business rules and project description
4. Database models and descriptions
5. Presentation and final Report

**Mid-Term Exam (100 points)**

**Final Exam (100 points)**

**\*\*\* Late Submission for Assignments Penalty 50% \*\*\***

**In-Person Class Meetings (Off-line) for Fall 2023 Schedule.**

**CS 5600: Advanced Database Systems**

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| **CRN** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| 12823 T12:10-2:50PM | 08/15 | 08/29 | 09/12 | 09/26 | 10/17 | 10/31 | 11/28 |
| 12824 T12:10-2:50PM | 08/22 | 09/05 | 09/19 | 10/10 | 10/24 | 11/07 | 12/05 |
| 11317 T3:00-5:40PM | 08/15 | 08/29 | 09/12 | 09/26 | 10/17 | 10/31 | 11/28 |
| 11518 T3:00-5:40PM | 08/22 | 09/05 | 09/19 | 10/10 | 10/24 | 11/07 | 12/05 |
| 12721 W3:00-5:40PM | 08/16 | 08/30 | 09/13 | 09/27 | 10/18 | 11/01 | 11/29 |
| 12722 W3:00-5:40PM | 08/23 | 09/06 | 09/20 | 10/11 | 10/25 | 11/08 | 12/06 |
| 11510 R3:00-5:40PM | 08/17 | 08/31 | 09/14 | 09/28 | 10/19 | 11/02 | 11/30 |
| 12010 R3:00-5:40PM | 08/24 | 09/07 | 09/21 | **10/12\*** | 10/26 | 11/09 | 12/07 |
| 12105 F12:10-2:50PM | 08/18 | 09/01 | 09/15 | 09/29 | 10/20 | 11/03 | 12/01 |
| 12114 F12:10-2:50PM | 08/25 | 09/08 | 09/22 | **10/13\*** | 10/27 | 11/10 | 12/08 |
| 13971 F3:00-5:40PM | 08/18 | 09/01 | 09/15 | 09/29 | 10/20 | 11/03 | 12/01 |
| 13972 F3:00-5:40PM | 08/25 | 09/08 | 09/22 | **10/13\*** | 10/27 | 11/10 | 12/08 |

**\*Note: Fall Break (10/12/2023 and 10/13/2023) are online classes.**

**Zoom Meeting ID: 328 993 7962 for attend the online classes.**

**https://ucmo.zoom.us/j/3289937962**