**Course Outline (Summer ’23)**

Department of Electrical and Computer Engineering

School of Engineering and Physical Sciences

North South University, Bashundhara, Dhaka-1229, Bangladesh



**Course Title:** Database Systems

**Course Code:** CSE311.3

**Credit Hours:** 3

**Class Timing:** ST 1.40 pm – 2.55 pm

**Classroom:** SAC 205

**Course Instructor:** Md. Ishan Arefin Hossain (IAH)

Full**-**time Lecturer, Dept. of ECE, NSU

**Office Room:** SAC 1186

**Email ID:** ishan.hossain@northsouth.edu

**Office Hour:** check <http://ece.northsouth.edu/people/mr-md-ishan-arefin-hossain>

**(***You are required to send prior email to me for making an appointment during my other office hours.)*

**Course Summary:**

This course introduces students with database management systems for the first time in their undergraduate study. Drawbacks of flat file system are demonstrated and advantages of relational database systems are introduced. The course examines the logical organization of databases: the entity-relationship model; the hierarchical, network, and relational data models and their languages. Functional dependencies and normal forms are discussed. Design, implementation, and optimization of query languages; security and integrity; concurrency control, different level of indices, e.g., tree and hash based indices are introduced. Access costs are compared for different alternatives. This course has separate mandatory laboratory sessions every week in a separate course CSE 311L which has 0 credits, but the students (in group) use hands on SQL queries and as a culmination, they build a full fledged database system including a front end. The evaluation of the lab works is carried over to the theory part of the course.

**Course Objectives:**

1. to make students comprehend the advantages of using database system over flat files.
2. to get students familiar with requirement analysis specially data requirements of an organization
3. To introduce the conceptual design from requirement analysis using E-R diagrams and also mapping ER diagrams into relational schema.
4. to introduce the basics and usage of relational algebra that are the foundation of SQL.
5. to transform a relational design into physical database design using popular commercialized database, e.g., Oracle, MySQL etc.
6. to demonstrate and show the evils of redundancy by introducing the concepts of functional dependencies and their types.
7. to design full-fledged physical database systems with least redundancy and most optimized manner.
8. to build their independent projects emphasizing the data requirement.

**Mark Distribution (Tentative):**

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| **Attendance** | **5%** |
| **Quiz (Best 2 from 3)** | **15%** |
| **Presentation/Assignment** | **10%** |
| **Mid** | **20%** |
| **Final** | **30%** |
| **Lab** | **20% (At least 60% of the total Lab marks needed to pass the theory course)** |

**General Rules:**

* Follow university policies. Any breach of university policies will be reported to the Department, Proctor Office and University Syndicate for further actions.
* Plagiarism is strictly prohibited. Any kind of plagiarism will lead to zero grade on a particular assessment. Besides, actions will be taken according to the university policy.
* No make-up quiz as there is one optional quiz.
* **No make-up mid or final will be held except for critically valid medical reasons, in which case the student must send prior notification and present medical documents as proof.**
* Sharing assignment or quiz specifications or posting them online (to sites like Studocu, CourseHero etc.) is considered academic misconduct. You are never permitted to post, share, or upload course materials without explicit permission from your instructor.
* Any additional Instructions will be updated as we proceed through the course.

**Grading policy:**

NSU grading policy will be followed which can be found in the following link: <http://www.northsouth.edu/academic/grading-policy.html>

2