

**TIANJIN NORNAL UNIVERSITY**  
**SCHOOL OF MANAGEMENT**

**INTRODUCTION TO PRINCIPLE AND TECHNOLOGY**  
**OF DATABASE SYSTEM**

**Lecture Venues(temporary)**

Lecture Theatre A109

**Times(temporary)**

Lectures:

A whole semester, 68 hours classroom sessions and computer practices.

Tutorials:

Tutorials start in Week 2 and conclude in week 18.

In order to pass the course students are required to actively and regularly attend classroom sessions and computer practicals. If for some reason a student cannot attend, please beforehand inform either the instructor or department secretary.

**Lecturer**

LiuZhihong

**Department secretary**

Ms. Wang

**Credits**

Successful completion of the course, including classroom sessions, classroom assignments, computer practical assignment and written examination, earns the student 4 credit units (ECTS).

**Aim**

To provide students with a basic understanding of the important concepts, theories, related research and new developments in database technology for further research and study; steps and methods of database design; common database system management and development technologies. Another objective of this course is to provide students with the internal structure of the database management system and its realization. Finally, introduce the role and current issues faced by Principle and Technology of Database system. The main contents of this course are illustrated as follow:

- Database system introduction
- Relational model
- Structured Query Language(SQL)
- Relational data theory
- Database design

Transaction management  
Database protection  
Recent development of database technology

### **Learning outcomes**

Students successfully completing this course will be able to

#### **Methods of Assessment:**

Assessing students' achievement of this course's learning outcomes is done using homework, quizzes, examinations and project assignments.

(1) Homework: Homework will be collected and checked for both completion as well as content.

(2) Examinations: You will have to work efficiently to complete exams in the time allotted. The exams will be very similar to the homework problems, hence, if one does not do the homework the likelihood of successfully writing the examinations is greatly diminished.

(3) In-class Participation: In-class participation consists of answering questions, in-class assignments and quizzes (group and individual) and is used to assess what is being understood in a quick and timely manner.

(4) Project: You will do team project which will be assessed through project presentation and project reports.

#### **Timeline for Assessment**

Homework is typically assigned bi-weekly throughout the semester. The mid-term exams will be given in week 5, week 10, and week 14. The final exam will be given during finals week

### **Readings(temporary)**

Database System Concepts (Fifth Edition), by A. Silberschatz, H. F. Korth, and S. Sudarshan (2005), ISBN: 0-07-295886-3.

### **Individual work**

Students are required to get their two hours a week at the computers, with a view to discuss the content with the instructor and fellow students.

To pass the course students need to practice at the computers after every classroom session and do the individual assignments and actively and successfully take part in classroom assignments and discussions. The willingness and ability to participate in classroom discussions and interact with the group have a decisive impact on the final grade.

### **Assessment**

The attendance stands for 30% and the final examination stands for 70% of the basic grade. In addition, participation in classroom discussions and assignments that may be related to them influences – in a favorable or unfavorable way – the final grade. This impact on the final grade may be substantial.

### **Requirements**

For advanced students, the data structures and algorithms, discrete mathematics, software engineering and high-level language programming is required.

### **LECTURE TOPICS(temporary)**

- 1. Introduction, Relational Model**
- 2. SQL**
- 3. SQL**
- 4. Advance SQL**
- 5. Database Design and E-R Model, Midterm I**
- 6. Relational Database Design**
- 7. Relational Database Design**
- 8. XML**
- 9. XML**
- 10. Transaction Management, Midterm II**
- 11. Transaction Management**
- 12. Data Mining, Information Retrieval**
- 13. Data Mining, Information Retrieval**
- 14. Database System Architecture**
- 15. Project Presentation, Midterm III**
- 16. Project Presentation, Final Preparation**
- 17. Review**
- 18. Final Exam**