

## ITDB Database (ITDB)

### **ITDB 1401 SQL Programming and Database Design**

**3 Credits**

*Prerequisite: ITIS 1005 or ITIS 1007 or permission of instructor.*

This course provides instruction in SQL (Structured Query Language) as well as a foundation in relational database theory and design. Students will learn various concepts as they apply to relational database management including the importance of database in applications, data modeling, database normalization, and SQL for data processing. Students will also be introduced to concepts in data analytics and database administration. This course helps students to prepare for industry certification. Although it is not a prerequisite for this course, students may benefit from taking a programming course prior to taking this course.

(5 contact hours: 1 lecture, 4 lab)

### **ITDB 1405 Oracle PL/SQL Programming**

**2 Credits**

*Prerequisite: ITCS 1010, ITDB 1401 (can be taken concurrently); or permission of instructor.*

This course continues the study of the Oracle relational database management system by providing an introduction to the Oracle PL (Procedural Language). Students will write PL with embedded SQL (Structured Query Language) to interact with an Oracle Server, create control structures, write explicit cursors, and handle exceptions. Additional concepts include procedures, functions, packages, and triggers. This course helps students prepare for Oracle certification.

(3.25 contact hours: 0.75 lecture, 2.5 lab)

### **ITDB 1406 Microsoft SQL Concepts**

**2 Credits**

*Prerequisite: ITIS 1005 or ITIS 1007 or permission of instructor.*

This course provides students with knowledge about SQL (Structured Query Language) along with an introduction to programming objects using Microsoft SQL. Students will use Microsoft SQL Server to write queries, create and modify data, and create database objects such as views, stored procedures and functions, and triggers. This course helps students prepare for Microsoft SQL Server certification. Although it is not a prerequisite for this course, students may benefit from taking ITDB 1401 SQL Programming and Database Design prior to taking this course.

(3 contact hours: 1 lecture, 2 lab)

### **ITDB 1407 Analysis and Design of Database Systems**

**2 Credits**

*Prerequisite: ITIS 1005 or ITIS 1007 or permission of instructor.*

This course provides a survey of current enterprise database management systems utilized in cloud, web, and embedded applications. Students will learn how to install, configure, design, and optimize database systems. Concepts in database design theory and management will be covered. Students will learn how to utilize SQL for data analysis and application implementation.

(3 contact hours: 1 lecture, 2 lab)

### **ITDB 1450 Visualization Tools for Data Analytics**

**2 Credits**

*Prerequisite: ITIS 1520 or permission of instructor.*

This course provides students with the knowledge, skills, and techniques needed to utilize various powerful visualization tools for data analysis. Students will be shown best practices and features of using data visualization tools such as Tableau and Power BI. Skills learned include connecting to data, charting, forecasting and reporting, creating dashboards, and more. Upon completion of this course students will have obtained sought-after skills in the field of data analysis. This course is required for students in the Data Analytics Concentration but will also benefit students seeking employment in other fields such as health care, business, finance, etc.

(4 contact hours: 1 lecture, 3 lab)

### **ITDB 2500 Data Analytics**

**3 Credits**

*Prerequisite: ITDB 1405, ITCS 1880; or permission of instructor.*

This course provides students with a range of concepts, techniques and applications of data analytics in various settings. Students will gain experience in data storage, processing, analysis, visualization, and application issues as well as hands-on experience using various tools for data analysis.

(4.5 contact hours: 1.5 lecture, 3 lab)