CSCI 2020 

**Fundamentals of Database**

Credit Hours: 3

Contact Hours: 4

Course Coordinator: Kellie Price

Text(s): *Fundamentals of SQL Programming* By Mata-Toledo & Cushman (Recommended)

Catalog Description:

This course introduces students to the essential skills of creating, maintaining, and querying a database system. Basic methodologies for transferring data between a database and a program or web page are covered. Also considered are methodologies for database design to ensure consistency and accuracy of the data.

Prerequisite(s): CSCI 1250 and CSCI 1900

CS: REQUIRED
IS: REQUIRED
IT: REQUIRED

Course Outcomes:

- Build a simple 3-5 table database - ETSU Outcomes 3a, CS-2, IS-1, IT-1; ABET Outcomes c, CS-k, i, IS-j, IT-j, IT-k
- Analyze the benefits of different database designs - ETSU Outcomes 3a, CS-2, IS-1, IT-1; ABET Outcomes b, c, CS-k, IS-j, IT-j, IT-k
- Identify and use primary and foreign keys - ETSU Outcomes 3a, CS-2, IS-1, IT-1; ABET Outcomes c, CS-k, i, IS-j, IT-j, IT-k
- Construct SQL queries that: Join 2 or more tables, Utilize aggregate Functions, and Sort their output - ETSU Outcomes 3a, CS-2, IS-1, IT-1; ABET Outcomes c, CS-k, i, IS-j, IT-j, IT-k
- Develop programs that move information between programs and a database in both directions - ETSU Outcomes 3a, CS-2, IS-1, IT-1; ABET Outcomes c, CS-k, i, IS-j, IT-j, IT-k
- Employ basic SQL security features - ETSU Outcomes 3a, 5b, CS-2, IS-1, IT-1; ABET Outcomes c, CS-k, e.4, i, IS-j, IT-j, IT-k
Major Topics:

- What is a Database
- What is an RDBMS
- What is a table?
- Primary and Foreign Keys
- Simple Selects
- Selects with conditions
- Two and Three Table Joins
- Aggregates (including grouping)
- Debugging SQL
- Building a query from other queries
- Connecting to a DB from a programming language
- What makes a good table?
- Finding problems in a Database
- Security