CSCI 4127  

Credit Hours:  3  

Contact Hours:  4  

Course Coordinator:  Adam Ogle  

Text(s):  

_Oracle Database 11g The Complete Reference_, Loney, Kevin, 2008 (Required)  

Catalog Description:  

A study of the use and underlying principles of database management systems, and approaches for databases design with an emphasis on the relational approach. Students learn how to use good design techniques and implement methods for both small and large databases. Laboratory use of database software for designing, implementing, debugging, and maintaining database systems is an integral part of this course.  

Prerequisite(s):  CSCI 2020 and (CSCI 2210 or CSCI 2910)  

CS:  MAJOR ELECTIVE  

IS:  SELECTED ELECTIVE (EITHER CSCI 4127 or CSCI 4227)  

IT:  SELECTED ELECTIVE (EITHER CSCI 4127 or CSCI 4227)  

Course Outcomes:  

Understand and create databases using the relational model - ETSU Outcomes 3a; ABET Outcomes b, c  

Design ER diagrams based on simple database specifications - ETSU Outcomes 4b, IS-1, IT-1; ABET Outcomes b, IS-j, IT-k  

Design and implement complex queries, and updates using the ISO standard SQL language - ETSU Outcomes 3a, IS-1a, IT-1; ABET Outcomes c, IS-j, IT-j  

Design and implement server side procedures and triggers - ETSU Outcomes 3a, IS-1b; ABET Outcomes c, IT-m  

Design and query object relational databases - ETSU Outcomes 3a; ABET Outcomes c  

Understand and explain query execution plans - ETSU Outcomes 3a; ABET Outcomes c, IT-1  

Major Topics:
Abstract data modeling

The entity-relationship (ER) data modeling language

The Relational data model (concepts, functional dependencies, normal forms, mappings from abstract data models to the relational model)

SQL (basic and advanced queries, DML, DDL, and programming functions in a database language).