SYLLABUS

DIVISION: Business and Engineering Technology **REVISED:** Summer 2014
CURRICULA IN WHICH COURSE IS TAUGHT: IST, Information Systems Technology
COURSE NUMBER AND TITLE: **ITD 132 –** Structured Query Language
CREDIT HOURS: 3 **HOURS** **CONTACT HOURS: 3. LEC: 3, LAB:** 0

I. CATALOG DESCRIPTION: Incorporates a working introduction to commands, functions and operators used in SQL for extracting data from standard databases.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES: ITD 132 will address the following IST program outcomes:

- Implement Information Technology skills required by software applications.
- Apply methodologies to stay current in IT offerings, trends, and certifications.
- Apply analytical and problem solving skills for computer system designs, planning, andsupport.
- Design, code, test, debug, and document software needed for computer system implementation and maintenance.
- Apply current IT industry standards, protocols, and techniques.

III. REQUIRED BACKGROUND: n/a.

IV. COURSE CONTENT:

- Database history
- Data Modeling and diagramming
- Entities and Entity Relationships
- Unique Identifiers and Normalization
- Data Structure
- Transforming the Conceptual Model to the Physical Model
- Designing, creating and modifying tables with SQL
- Creating and modifying SQL queries
- Viewing and organizing data with SQL
- Defining relationships

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE.

X Communication
_____ Cultural and Social Understanding
_____ Personal Development
X Scientific Reasoning
X Critical Thinking
X Information Literacy
X Quantitative Reasoning

VI. LEARNER OUTCOMES	VII. EVALUATION
Database History • Data vs. Information • Why a database?	Lab exercises Online test
Data Modeling • Conceptual and physical models • Entities, instances, attributes and identifiers • Entity relationships and their modeling and diagramming	Lab exercises Online test Modeling Project
Entity Relationships • Supertypes, subtypes • Business rules • Transferability • Types • CRUD	Lab exercises Online test Project including: Identify fields to include *business rules*, Identify sub and supertypes, define types and diagramming the relationships.
Normalization, Arcs and Hierarchies • First, Second and Third normal form • Arcs, Hierarchies and recursion	Lab exercises Online test Develop as well as debug Relationships
Transforming from Conceptual to Physical • Relational database concepts • Basic, Relationship and Subtype mapping	Lab exercises Online test Project that converts a complex conceptual model to the physical definition
Introduction to SQL • Query • Customize the results • Use Case and character manipulation • Number and date function	Lab exercises Online test
More Complicated Results with SQL • Conversion functions • Join • Group • Subquery	Lab exercises Online test
Create database with SQL • Create database and tables • Ensure quality query results • Constraints • Sequences, index and synonyms • Database security fundamentals	Lab exercises Online test FINAL PROJECT: defines and develops query and data manipulation interfaces for a secure, normalized database that can be easily queried from a conceptual definition.