

**California State University Channel Islands
New Course Proposal**

Program Area: Computer Science

1. Catalog Description of the Course.

IT 420 DATABASE THEORY AND DESIGN FOR IT (3)

Three hours of lecture in the lab per week

Prerequisites: MATH 300

Database structure including: structure definition, data models, semantics of relations, and operation on data models. Database schemas: element definition, use and manipulation of the schema. Elements of implementation. Algebra of relations on a database. Hierarchical data bases. Discussion of information retrieval, reliability, protection and integrity of databases.

2. Mode of Instruction.

	<u>Units</u>	<u>Hours per Unit</u>	<u>Benchmark Enrollment</u>
Lecture	3	1	24
Seminar	0	0	0
Laboratory	0	0	0
Activity	0	0	0

3. Justification and Learning Objectives.

Justification: BSIT required course.

Learning Objectives:

Student who successfully complete this course will:

1. Be able to identify the main components of a Database System.
2. Be able to create a Entity-Relation diagram for a database system.
3. Be able to normalize a given database design.
4. Be able to create SQL queries that retrieve the appropriate data.
5. Be able to create SQL queries that update the database.
6. Be able to create SQL queries using inner and outer joins.
7. Be able to design and implement a simple database system.

4. Is this a General Education Course?

No.

5. Course Content in Outline Form.

Topics:

1. Integrity Constraints.
2. File Systems and Databases.
3. Database Models.
4. Logical Views of Data.
5. Data Redundancy Issues.
6. Entity-Relationship Modeling.
7. Normalization of Database Designs.
8. ER-Diagrams
9. First, Second and Third Normal Forms.
10. SQL.
11. Database Access Control and Authentication.

6. Cross-listed Courses.

None.

7. References.

<u>Title</u>	<u>Author</u>	<u>Publisher</u>	<u>Year</u> <u>ISBN</u>
1. Fundamentals of Database Systems	Ramez Elmasri	Addison Wesley Higher Education	2002 0201741539
2. Database Systems	Peter Rob, Carlos Coronel	Course Technology	2002 061906269X
3. Database Systems: The Complete Book	Ullman, Jeffrey D.	Prentice Hall	2002 0130319953

8. Faculty Qualified to Teach This Course.

Qualified Faculty: Smith, Wolfe

9. Frequency.

Projected semesters to be offered: Fall, Spring

10. New Resources Required.

- a. New Equipment needs: Use of existing computer lab.
- b. New Library needs: none
- c. New Space/Facilities needs: none

11. Program Modifications.

None.

12. Proposer of Course.

Proposer: Smith, Wolfe Date: 7/13/2004