Syllabus

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CIT-260: Database Concepts

Course Description

This course introduces students to basic terminology and concepts of databases, including data modeling, database models, and database design principles. Attention will also be given to the most popular relational database management systems. A current desktop database application will be used as a tool in database design, use, maintenance, and management. Students will apply biblical and ethical concepts to database design and management.

Credit Hours: 3

Prerequisite Courses: None

Course Outcomes

Upon successful completion of this course, students should be able to:

1. Explain features of a database management system.
2. Identify basic features of a relational model and relational database.
3. Use the Structured Query Language (SQL) to access and manage relational database systems.
4. Identify elements of basic database design theory.
5. Document database management functions.
6. Describe the basic concepts of database administration and database management systems.
7. Compare different database management systems.

Course Topics

- Database management systems
- Database processing
- Basic database terminology and concepts
- Database administration
- Stored procedures
- Methods to create relational database tables
- Security and integrity rules of database
- Database design
- Client-server database systems
- Database in web application
- Object-oriented database management system

Course Resources

Bible

Starks, J. L., Pratt, P. J., & Last, M. Z. (2019). *Concepts of database management* (9th ed.). Cengage.

IWU Diversity Statement

IWU, in covenant with God's reconciling work and in accordance with the Biblical principles of our historic Wesleyan tradition, commits to build a community that reflects Kingdom diversity.

We will foster an intentional environment for living, teaching, and learning, which exhibits honor, respect, and dignity. Acknowledging visible or invisible differences, our community authentically values each member's earthly and eternal worth. We refute ignorance and isolation and embrace deliberate and courageous engagement that exhibits Christ's commandment to love all humankind. (2016)

Grading Scale

Grade	Quality Points Per Credit	Percentage	Score
A	4.0	95%–100%	950–1,000
A-	3.7	92%–94.9%	920–949
B+	3.3	89%–91.9%	890–919
B	3.0	85%–88.9%	850–889

B-	2.7	82%–84.9%	820–849
C+	2.3	79%–81.9%	790–819
C	2.0	75%–78.9%	750–789
C-	1.7	72%–74.9%	720–749
D+	1.3	69%–71.9%	690–719
D	1.0	65%–68.9%	650–689
F	0.0	0%–64.9%	0–649

Note: In graduate level courses, a grade of C- or below will require the course to be repeated.

Grading Policies

Your grading policy for your course is dependent on your school and program. Your grading policies can be found in the IWU Catalog.

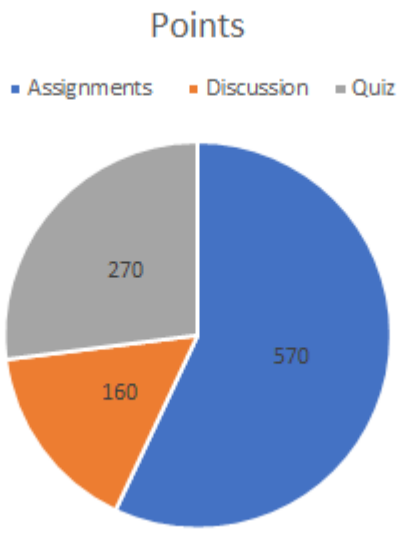
Letter Grade Equivalencies

Grade	Quality Points Per Credit
A	Clearly stands out as excellent performance. Has unusually sharp insights into material and initiates thoughtful questions. Sees many sides of an issue. Articulates well and writes logically and clearly. Integrates ideas previously learned from this and other disciplines. Anticipates next steps in progression of ideas. Example "A" work should be of such nature that it could be put on reserve for all cohort members to review and emulate. The "A" cohort member is, in fact, an example for others to follow.
B	Demonstrates a solid comprehension of the subject matter and always accomplishes all course requirements. Serves as an active participant and listener. Communicates orally and in writing at an acceptable level for the degree program. Work shows intuition and creativity. Example "B" work indicates good quality of performance and is given in

	recognition for solid work; a "B" should be considered a good grade and awarded to those who submit assignments of quality less than the exemplary work described above.
C	Quality and quantity of work in and out of class is average. Has marginal comprehension, communication skills, or initiative. Requirements of the assignments are addressed at least minimally.
D	Quality and quantity of work is below average. Has minimal comprehension, communication skills, or initiative. Requirements of the assignments are addressed at below acceptable levels.
F	Quality and quantity of work is unacceptable and does not qualify the student to progress to a more advanced level of work.

Note: In graduate level courses, a grade of C- or below will require the course to be repeated.

Grade Summary



Workshop Outlines

Workshop One Outcomes

Upon successful completion of this workshop, you will be able to:

- Describe basic database management systems.
- Discuss basic features of a relational database.
- Explain features of database management systems and basic terminology.
- Identify basic features of a relational model and relational database, including queries, computed or calculated fields, as well as functions, grouping, sorting, and joining tables.
- Describe Database Management Systems (DBMS).
- Explain advantages and disadvantages of database processing.
- Document database management functions.
- Apply basic functionality of a relational database.

Workshop One Outline

Title	Due Dates
1.1 Discussion: Devotional—Foundation and Exposure	Due by the end of the workshop.
1.2 Quiz: Chapters 1 and 2	Due by the end of the workshop.
1.3 Assignment: In the News—Database Trends and Applications	Due by the end of the workshop.
1.4 Discussion: Big Data	Initial post due on the fourth day o responses to two classmates due b the workshop.
1.5 Assignment: BITS Corporation Exercises —Set One	Due by the end of the workshop.

*These times are only estimates. Actual completion times will vary.

Workshop Two Outcomes

Upon successful completion of this workshop, you will be able to:

- Introduce Structured Query Language (SQL).
- Create and apply multiple SQL functions, such as Compute, Join, Group, and Update.
- Examine security features of DBMS.
- Define views and use of system catalog.

Workshop Two Outline

Title	Due Dates
2.1 Discussion: Devotional—Relationships	Due by the end of the workshop.

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2.2 Quiz: Chapters 3 and 4	Due by the end of the workshop.
2.3 Discussion: Accessing Data	Initial post due on the fourth day o responses to two classmates due b the workshop.
2.4 Assignment: RSS Assignment One	Due by the end of the workshop.
2.5 Assignment: BITS Corporation Exercises —Set Two	Due by the end of the workshop.

*These times are only estimates. Actual completion times will vary.

Workshop Three Outcomes

Upon successful completion of this workshop, you will be able to:

- Discuss functional dependence and primary keys.
- Define first, second, third, and fourth normal forms.
- Explain how normalization is used in database design.
- Describe the problems associated with tables that are not in first, second, or third normal form.
- Understand how normalization is used in the database design process.
- Describe the need for database administration.
- Identify the role of the DBA.
- Discuss the DBA's technical responsibility for database design, testing, and performance.

Workshop Three Outline

Title	Due Dates
3.1 Discussion: Devotional—Integrity	Due by the end of the workshop.
3.2 Quiz: Chapter 5	Due by the end of the workshop.
3.3 Discussion: Normalization	Initial post due on the fourth day o responses to two classmates due b the workshop.
3.4 Assignment: InfoWorld	Due by the end of the workshop.
3.5 Assignment: BITS Corporation Exercises —Set Three	Due by the end of the workshop.

*These times are only estimates. Actual completion times will vary.

Workshop Four Outcomes

Upon successful completion of this workshop, you will be able to:

- Examine the entity-relationship model for representing and designing databases.
- Define the informative-level design step in database design.
- Define the physical-level design step in database design.
- Discuss general process and goals of database design.
- Use database design language (DBDL) to document database designs.
- Introduce the functions or services provided by a DBMS that include data recovery and security.
- Discuss user views and explain their function.

Workshop Four Outline

Title	Due Dates
4.1 Discussion: Devotional—Design	Due by the end of the workshop.
4.2 Quiz: Chapters 6 and 7	Due by the end of the workshop.
4.3 Discussion: Security	Initial post due on the fourth day o responses to two classmates due b the workshop.
4.4 Assignment: RSS Assignment Two	Due by the end of the workshop.
4.5 Assignment: BITS Corporation Exercises —Set Four	Due by the end of the workshop.

*These times are only estimates. Actual completion times will vary.

Workshop Five Outcomes

Upon successful completion of this workshop, you will be able to:

- Describe the need for database administration.
- Identify the role of the DBA.
- Explain the responsibilities of the DBA.
- Identify the role and explain the responsibilities of the DBA.
- Describe the distributed database management system (DDBMS) and the client-

server system.
- Describe distributed database management system (DDBMS).

Workshop Five Outline

Title	Due Dates
5.1 Discussion: Devotional—Our Role as Christians	Due by the end of the workshop.
5.2 Quiz: Chapters 8 and 9	Due by the end of the workshop.
5.3 Discussion: DBMS and Administrator Roles	Initial post due on the fourth day o responses to two classmates due b the workshop.
5.4 Assignment: RSS Assignment Three	Due by the end of the workshop.
5.5 Assignment: BITS Corporation Exercises —Set Five	Due by the end of the workshop.
End of Course Survey	Due by the end of the workshop.

*These times are only estimates. Actual completion times will vary.

Outline Totals

Total Time	Total Points
93.5 hours*	**1,000**

* These timings are based on estimations of average times to complete each activity. Actual activity completion times will vary.

Alternative Assignment Policy

Students with a documented disability may request accommodations for an alternative assignment(s) for course activities (Examples: video assignments, etc.). It is the student's responsibility to submit the form received from the Disability Services Office indicating his or her specific accommodation to the instructor prior to the start of each course.

Expectations, Policies, and Important Student

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Activity Details Completion Summary

Task: View this topic