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🚶 "Please remember me and my family in your prayers." 🌸

📖 Bachelor of Science in Computer Science

🎓 University of the People

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Computer Science
CS 3306 Databases 2

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CS 3306: Databases 2

Syllabus

Prerequisites: CS 2203: Databases 1.

Course Description: This course will cover server database management, configuration and administration, security mechanisms, backup and recovery; transact SQL Programming, and an introduction to database web-application development and security.

Required Textbook and Materials: UoPeople courses use open educational resources (OER) and other materials specifically donated to the University with free permissions for educational use. Therefore, students are not required to purchase any textbooks or sign up for any websites that have a cost associated with them. The main required textbooks for this course are listed below, and can be readily accessed using the provided links. There may be additional required/recommended readings, supplemental materials, or other resources and websites necessary for lessons; these will be provided for you in the course's General Information and Forums area, and throughout the term via the weekly course Unit areas and the Learning Guides.

- Sharma, N., Perniu, L., Chong, R.F., Iyer, A., Nandan, C., Mitea, A.C., Nonvinkere, M., & Danubianu, M. (2010). *Database Fundamentals* (1st ed.). Markham, ON: IBM Corporation. Available at https://my.uopeople.edu/pluginfile.php/57436/mod_book/chapter/37620/DatabaseFund.pdf

- Silberschatz, A., Korth, H.F., & Sudarshan, S. (2001). *Database System Concepts* (4th ed.). New York, NY: McGraw-Hill. Available at [Database System Concepts 4th Edition By Silberschatz-Korth-Sudarshan.pdf](#)

- Din, A.I. (1994). *Structured Query Language (SQL): A Practical Introduction.* Manchester, UK: NCC Blackwell. Available at https://db.suvenconsultants.com/downloads/SQL-A-Practical-Introduction.pdf

- Simpson, B. & Toussi, F. (Eds.). (2013). *HyperSQL User Guide*. The HSQL Development Group. Available at https://my.uopeople.edu/pluginfile.php/57436/mod_book/chapter/37620/HyperSQLUserGuide.pdf

- HyperSQL website by The HSQL Development Group. Available at http://hsqldb.org/

Software Requirements/Installation: In this course, we will be learning about database systems and will be conducting database lab exercises. The course has been designed so that it can be completed using freely available open source tools including:

OpenOffice Base Version 3.3.0 (or current version) – The database included in the OpenOffice suite. OpenOffice Base uses the HSQLDB database engine, which is compliant with the ANSI SQL-92 and the ANSI SQL-2008 specifications. The open office suite can be downloaded at the following url: http://www.openoffice.org/download/

Dia version 0.97.2 – The Dia (diagram editor) application provides a free open source tool that can be used to create diagrams including flowcharts and the Entity Relationship diagrams required in this course. Dia can be downloaded from the following url: http://dia-installer.de/download/index.html.en

You also have a choice to use any other relational database system that supports ANSI SQL such as DB2-Express-c, which is the database developed by IBM and used in examples within the book. You can also use MySQL. If you opt to use DB2 Express, Oracle, or MySQL on your personal computer they can be accessed at the following URLs:

DB2 Express-c Installation Download: http://www-01.ibm.com/software/data/db2/express-c/download.html

MySQL for Windows: http://www.mysql.com/downloads/mysql/

Oracle Express 11 Release 2 for Windows or Linux: http://www.oracle.com/technetwork/products/express-edition/downloads/index.html

Assignment Format Requirements: This course will require that the student prepare and submit assignments to be subjected to a peer review and assessment process. To ensure that all peer assessors can properly view any assignment, this course requires the following file formats and associated technology tools to be used.

For all text-based assignment submissions, the following and ONLY the following text document formats will be acceptable:

- Word 95/2000 or RTF (rich text format) formats which are supported by the following:
- Microsoft Office
- Open Office (http://www.openoffice.org)
- StarOffice (http://www.staroffice.com/)
- Google Docs (https://docs.google.com)
- Zoho (http://www.zoho.com/productivity-apps.html)

For spreadsheet data the standard Excel 97/2000/XP format is acceptable and supported by the following apps:

- Microsoft Office
- Open Office (http://www.openoffice.org)
- StarOffice (http://www.staroffice.com/)
- Google Docs (https://docs.google.com)
- Zoho (http://www.zoho.com/productivity-apps.html)

For any graphics, pictures, charts, or figures the grahics objects should be placed within either a text document (as specified above) or using a presentation format that is compatible with Microsoft Powerpoint 97/2000/XP which is supported by the following apps:

- Microsoft Office
- Open Office (http://www.openoffice.org)
- StarOffice (http://www.staroffice.com/)
- Google Docs (https://docs.google.com)
- Zoho (http://www.zoho.com/productivity-apps.html)

Each of the preceding office applications can be used. The OpenOffice application is the standard and recommended application for the University of the People. When using OpenOffice, make sure that you set the default format to a Microsoft Office 97/2000/XP compatible format.

For students who cannot install OpenOffice on their computer it is recommended that they use one of free web-based applications such as Zoho or GoogleDocs.

For students who are using mobile devices there are a number of free office compatible apps including:

- Kingsoft Office
- Documents to Go
- OfficeSuite
- OliveOffice
- SmartOffice Lite and others

This course also requires a graphics tool to create entity relationship (ER) diagrams. The recommended tool is the Dia Diagram Editor (http://dia-installer.de/).

When using Dia make sure to export drawings as jpeg image files and then insert them either into a presentation or text document using one of the tools defined above.

When creating the SQL assignments make sure that you submit a text document that contains your SQL statements.

Learning Objectives and Outcomes:

By the end of this course students will be able to:

1. Examine server database management and its attributes
2. Distinguish between configuration and administration of database systems
3. Describe database security mechanisms used to protect data
4. Understand backup and recovery procedures and apply to an active database
5. Apply transact SQL Programming to solve applied business problems
6. Describe database web-application development.
7. Apply Hyper Structured Query Language (SQL) statements to manipulate both data structures and data within a database system

Course Schedule and Topics: This course will cover the following topics in eight learning sessions, with one Unit per week. The Final Exam will take place during Week/Unit 9 (UoPeople time).

Week 1: Unit 1 - Introduction to Data models

Week 2: Unit 2 - Transaction Management

Week 3: Unit 3 - Application Development and Admin

Week 4: Unit 4 - Security Mechanisms

Week 5: Unit 5 - Backup and Recovery

Week 6: Unit 6 - Transact SQL Programming

Week 7: Unit 7 - Database Web-Application Development

Week 8: Unit 8 - Technology trends and databases

Week 9: Unit 9 - Course Review and Final Exam

Learning Guide: The following is an outline of how this course will be conducted, with suggested best practices for students**.**

Unit 1: Principles: Introduction to Data models

- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take the Self-Quiz

Unit 2: Principles: Transaction Management

- Peer assess Unit 1 Written Assignment
- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take the Self-Quiz

Unit 3: Application Development and Admin

- Peer assess Unit 2 Written Assignment
- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Make entries to the Learning Journal
- Take the Self-Quiz

- Take the Graded Quiz

Unit 4: Security Mechanisms

- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take the Self-Quiz

Unit 5: Backup and Recovery

- Peer assess Unit 4 Written Assignment
- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take the Self-Quiz

Unit 6: Transact SQL Programming

- Peer assess Unit 5 Written Assignment
- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Make entries to the Learning Journal
- Take the Self-Quiz
- Take the Graded Quiz

Unit 7: Database Web-Application Development

- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take the Self-Quiz

Unit 8: Technology trends and databases

- Peer assess Unit 7 Written Assignment
- Read the Learning Guide and the Reading Assignment
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and Submit the Learning Journal
- Take the Self-Quiz
- Read the Unit 9 Learning Guide carefully for instructions on the Final Exam
- Take the Review Quiz

Unit 9: Course Review and Final Exam

- Read the Learning Guide and take the Review Quiz, if you haven't already done so
- Prepare for, take, and submit the Final Exam
- The Final Exam will take place during Week/Unit 9 (UoPeople time); exact dates, times, and other details will be provided accordingly by your instructor

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Course Requirements:

Written Assignments & Assessment Forms

Some units in this course require that you complete a Written Assignment. You are required to submit your assignments by the indicated deadlines and, in addition, to peer assess three (3) of your classmates' assignments according to the instructions found in the Assessment Form, which is provided to you during the following week. During this peer assessment period, you are expected to provide details in the feedback section of the Assessment Form, indicating why you awarded the grade that you did to your peer. Failure to submit Written Assignments and/or Assessment Forms may result in failure of the course.

Discussion Assignments & Response Posts/Ratings

Some units in this course require that you complete a Discussion Assignment. You are required to develop and post a substantive response to the Discussion Assignment in the Discussion Forum. A substantive response is one that fully answers the question that has been posed by the instructor. In addition, you must extend the discussion by responding to at least three (3) of your peers' postings in the Discussion Forum and by rating their posts. Instructions for proper posting and rating are provided inside the Discussion Forum for each week. Discussion Forums are only active for each current and relevant learning week, so it is not possible to contribute to the forum once the learning week has come to an end. Failure to participate in the Discussion Assignment by posting in the Discussion Forum and responding to peers as required may result in failure of the course.

Learning Journal

Your instructor may choose to assign specific topics and/or relevant questions as a weekly Learning Journal entry for you to complete, but you are still encouraged to also use it to document your activities, record questions/problems you may have encountered, reflect on the learning process, and draft answers for other course assignments. The Learning Journal must be updated on a weekly basis, because its entries will be assessed by your instructor directly as a part of your final grade. The Learning Journal will only be seen by your instructor.

Quizzes

This course will contain three types of quizzes – the Self-Quiz, the Graded Quiz, and the Review Quiz. These quizzes may contain multiple choice, true/false, or short answer questions. The results of the Self-Quiz will not count towards your final grade. However, it is highly recommended that you complete the Self-Quiz to ensure that you have adequately understood the course materials. Along with the Reading Assignments, the results of the Self-Quiz should be used as part of an iterative learning process, to thoroughly cover and test your understanding of course material. You should use the results of your Self-Quiz as a guide to go back and review relevant sections of the Reading Assignments. Likewise, the Review Quiz will not count towards your final grade, but should also be used to assist you in a comprehensive review and full understanding of all course material, in preparation for your Final Exam. Lastly, the results of the Graded Quiz will count towards your final grade.

Final Exam

The Final Exam will take place during the Thursday and Sunday of Week/Unit 9, following the completion of eight units of work. The format of the Final Exam is similar to that of the quizzes, and may contain a combination of different question types. You will have one attempt to take the exam, and it will be graded electronically. Specific instructions on how to prepare for and take the Final Exam will be provided during Week 8 (located inside the Unit 9 Learning Guide). Final Exams must be taken without the use of course learning materials (both those inside and outside the course). If particular materials are allowed for use during the exam, these will be noted in the exam's instructions.

The Final Exam for this course must be done under the supervision of a proctor. Since you already secured your proctor before registering for this course, this is a reminder that you should coordinate with him/her before you take the exam. As a reminder, students are required to successfully complete proctored exams spaced throughout their program of study at UoPeople, in order to verify the student's identity in confirming a degree and diploma upon graduation.

Course Forum

The Course Forum is the place to raise issues and questions relating to the course. It is regularly monitored by the instructors, and is a good place to meet fellow students taking the same course. While it is not required to participate in the Course Forum, it is highly recommended.

Course Policies

Grading Components and Weights

Each graded component of the course will contribute some percentage to the final grading scale, as indicated here:

Learning Journals	10%
Written Assignments	20%
Discussion Assignments	20%
Two Graded Quizzes	20%
Final Exam	30%
TOTAL	**100%**

Grading Scale

This course will follow the standard 100-point grading scale defined by the University of the People, as indicated here:

Letter Grade	Grade Scale	Grade Points
A+	98-100	4.00

A	93-97	4.00
A-	90-92	3.67
B+	88-89	3.33
B	83-87	3.00
B-	80-82	2.67
C+	78-79	2.33
C	73-77	2.00
C-	70-72	1.67
D+	68-69	1.33
D	63-67	1.00
D-	60-62	0.67
F	Under 60	0.00

Grade Appeal

If you believe that the final grade you received for a course is erroneous, unjust, or unfair, please contact your course instructor. This must be done within seven days of the posted final grade. For more information on this topic, please review the Grade Appeal Procedure in the University Catalog.

Participation

Non-participation is characterized by lack of any assignment submissions, inadequate contributions to the Discussion Forums, and/or lack of peer feedback to Discussion/Written Assignments. Also, please note the following important points about course participation:

- Assignments must be submitted on or before the specified deadline. A course timeline is provided in the course schedule, and the instructor will specify deadlines for each assignment.
- Any student showing non-participation for two weeks (consecutive or non-consecutive) is likely to automatically fail the course.
- Occasionally there may be a legitimate reason for submitting an assignment late. Most of the time, late assignments will not be accepted and there will be no make-up assignments.
- All students are obligated to inform their instructor in advance of any known absences which may result in their non-participation.

Academic Honesty and Integrity

When you submit any work that requires research and writing, it is essential to cite and reference all source material. Failure to properly acknowledge your sources is known as "plagiarism" – which is effectively passing off an individual's words or ideas as your own. University of the People adheres to a strict policy of academic honesty and integrity. Failure to comply with these guidelines may result in sanctions by the University, including dismissal from the University or course failure. For more information on this topic, please review the Academic Integrity Policy in the University Catalog.

Unless otherwise stated, any materials cited in this course should be referenced using the style guidelines established by the American Psychological Association (APA). The APA format is widely used in colleges and universities across the world and is one of several style and citation formats required for publication in professional and academic journals. Purdue University's Online Writing LAB (OWL) is a free website that provides excellent information and resources for understanding and using the APA format and style. The OWL website can be accessed here: https://owl.purdue.edu/owl/purdue_owl.html

Code of Conduct

University of the People expects that students conduct themselves in a respectful, collaborative, and honest manner at all times. Harassment, threatening behavior, or deliberate embarrassment of others will not be permitted. Any conduct that interferes with the quality of the educational experience is not allowed and may result in disciplinary action, such as course failure, probation, suspension, or dismissal. For more information on this topic, please review the Code of Conduct Policy in the University Catalog.