Course Syllabus

Jump to Today

ACIS5504

Information Systems Design and Database Concepts

Spring 2020

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Course Description

The goal of this course is to cover how enterprise systems can be supported by proper design and implementation of database systems. Today's managers need to understand the critical role enterprise systems play in supporting organizational decision-making. There are various approaches to designing these systems. These approaches are continually evolving and require managerial involvement in the design process. Students use entity relationship models

and normalization as tools for designing information requirements for enterprise systems. Relational databases are emphasized throughout the course. Databases are implemented on software packages. Database transaction processing and distributed data structures provide students an informed perspective on database complexity. Data warehousing and current trends in database technology are also discussed.

Course Objectives

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

1. Explain the characteristics of data
2. Create entity-relationship models for business and other situations
3. Convert entity-relationship models into relational models
4. Use SQL to create tables, indexes, and views for business and other situations
5. Use SQL to insert, update, and delete rows in tables
6. Explain the concepts of record locking and multi-user concurrency controls
7. Create user interfaces and reports using tools within a DBMS
8. Design a data warehouse for a business situation
9. Create the SQL procedures to extract, transform, and load data for the data warehouse

Prerequisites

An interest in Information Systems and database management systems.

Assessment

Complete descriptions and instructions for completing assessments will be provided when assignments are made. Dates for assignments and due dates for assessment completion, will be indicated on the course schedule.

	Total Score:
Mid Term Exam: Modules 1 through 9 (Chap. 1-8) Format: On-Line Exam Available from Saturday March 28 at 7am thru Monday Monday March 30 at 11:59 pm	150 points
Final Exam: Modules 10 through 15 (Chap. 10-13,15 & 16) Format: On-Line Exam Available from Saturday May 9 at 7 AM through Monday May 11 at 11:59 PM	150 points
Assignments (2 @ 25 points each)	50 points
Projects (2 @ 75 points each)	150 points
Total	**500 points**

Assignments	Course objectives satisfied
Assignment 1 –ER Modeling and MS Access (25 points)	#1, #2, #3, #4
Assignment 2 – MySQL Database Implementation (25 points)	#2, #3, #4, #5, #6
Project 1 – Database Development Project (75 points)	#2, #3, #4, #5, #6, #7
Project 2 – Data Warehouse Project (75 points)	#8, #9

Final Grades: All assignments receive a numeric grade. Your final grade will be converted to a letter grade as follows:

A 93-100%

A- 90-92.99

B+ 87-89.99%

B 83-86.99%

B- 80-82.99%

C+ 77-79.99%

C 73-76.99%

C- 70-72.99%

D+ 67-69.99%

D 63-66.99%

D- 60-62.99%

F less than 60%

Required Text

This semester we are trying a new book approach that provides a wealth of additional online information in addition to ebook and printed versions of the book. The book is:

Database Systems 12th edition Design, Implementation, & Management, Authors: **Carlos Coronel (https://www.chegg.com/authors/carlos-coronel)** and **Steven Morris (https://www.chegg.com/authors/steven-morris)**

This site has been set up for you to purchase the book for the class by Cengage.

Course Link URL: https://www.cengage.com/dashboard/#/course-confirmation/MTPNF1RNF35G/initial-course-confirmation (https://www.cengage.com/dashboard/#/course-confirmation/MTPNF1RNF35G/initial-course-confirmation)
Course Link Instructions: Print instructions
Course Key: MTPN-F1RN-F35G

I hope you find the additional online content of value. I think some features like Mobile access and Book Reading could be useful.

If you would like to use some other version of the 12 edition, e.g., used or rented, that is cheaper you may do so.

None of the online homework or quizzes count towards your grade in the course. However, you may find them useful for studying for the mid-term and final exams. All required assignments are listed on the assignments page and required readings are listed on the weekly module pages.

Materials

All additional materials for this course will be provided online as needed.

Technology

Students in this course will need a working and reliable computer and Internet access that will allow the use of Canvas course site tools, WebEx and any online resources provided.

In addition the following technologies below is required to complete assignments:

MS Office VT Graduate Student Bundle (Word, Visio, Access)

MySQL: Database Software (Free versions are downloadable)

Notepad++ is a free editor that is useful for sql and xml files.

Note that Notepad++ is available at **https://notepad-plus-plus.org/download/v6.8.8.html (https://notepad-plus-plus.org/download/v6.8.8.html)**

Do note that this course is a graduate course in database management system topics. To be successful in this course, you must be able to install the software tools necessary to implement relational databases. You are also expected to have the basic skills necessary to create and execute programs on your computer.

Finally, since individual machine configurations are the responsibility of the machine's owner, you should have the technical skills necessary to identify and resolve problems you encounter related to your own machine's setup, firewall, internet configuration, or browser configuration.

We will be using Zoom for weekly live sessions and office hours by appointment.

Course Structure

This is a highly asynchronous online course. This format requires students to be disciplined in their efforts and communications.

Students are expected to actively participate in the class by maintaining the pace and submission of assignments by due dates, monitoring the discussions related to modules and assignments, and contributing to discussions by requesting and providing information that is useful to other students and/or instructors. The vast majority of interaction in this class is to occur through the discussions for each assignment. This facilitates the most efficient and effective dissemination of course related information possible given our technology. Asking questions related to course content

via Email is discouraged. Email should be used for questions related to individual issues not appropriate for a class discussion.

The class will meet online using Web Ex on Tuesdays at 6:30 p.m. EDT for approximately 75 minutes. These weekly class sessions will be recorded and posted on the course website in the module for that week. Class attendance is not required, but is strongly encouraged. Useful information helpful for assignments is often conveyed during these sessions. If you cannot attend a class, you can listen to the recording at your convenience.

The Web Ex lectures are primarily geared towards addressing issues that are dealt with better in a classroom situation and can't be easily dealt with by recorded lectures. Thus, to get the most from the live session it is important that students complete the reading assignments and review the recorded lectures for that module before class.

All course materials to include the mid-term are posted and available at the start of the semester, allowing students to work ahead if they choose to do so. Note that the remainder of course materials will be available immediately after the midterm exam.

Development Project:

A complete database should be designed and implemented using Microsoft Access (or another database program of your choosing). A description of a business situation is provided, which details the requirements your database must satisfy. (You may also solve a work related or your own idea if you prefer; however, your project must be approved to ensure adequate complexity.)

A detailed project report should be submitted on the due date. This project must be done individually. Completing the project may require additional reading, research, and use of software tutorials not specifically covered in class. A full project description with further details is posted in the assignments folder.

Data Warehouse Project:

A complete data warehouse with a snowflake schema should be designed to address key management objectives in a common business situation, e.g., hotel industry. Two operational databases for the domain are evaluated and a series of SQL procedures written to extract, transform and load data from the two operational databases into the data warehouse. SQL needed to address management's key objectives using the fact and dimension tables of the data warehouse are created along with a description of the results suitable for presentation to management.

A detailed project report should be submitted on the due date. This project must be done individually. This may require additional reading and research. Note that a full project description with further details will be posted around the mid-term exam.

Canvas will be the learning management system for this course. The learning management system will be used to distribute course materials, post grades, and provide a means for discussions.

Camtasia will be used for narrated PowerPoint lectures and software demonstrations.

This course will be conducted as a learning community

According to Pallof & Pratt (1999), the key elements to the creation of a learning community are honesty, responsiveness, relevance, respect, openness, and empowerment. These will serve as the guides for our community. Therefore, students participating in this course are asked to be ***open*** to all perspectives and ***empowered*** to be ***honest*** in their ***timely responses*** to all questions, conversations, and discussions in a manner that is ***respectful*** and remains ***relevant*** to the topic or topics under discussion.

Palloff, R. M., & Pratt, K. (1999). Building learning communities in cyberspace. San Francisco, CA: Jossey-Bass Inc., Publishers.

Participation

Participants in this course should expect to spend about **8-10 hours per week** involved in the activities and completion of assignments over the semester. This is similar to the time one would invest in a course in a traditional classroom setting. This time invested is an average with some weeks requiring more, some less time to complete all assignments and activities.

In addition to adherence to due dates and time frame for completion of activities and assignments, participation includes contributions to discussions as well as adherence to all stated expectations in the **Expectations** document provided at the start of our course. VT's Principles of Community is our guiding tenet of how we are expected to communicate with each other. These Principles are available at this link: **http://inclusive.vt.edu/vtpoc0.html (http://inclusive.vt.edu/vtpoc0.html)** .

File-Naming Structure: To ensure files are not missed or misplaced, participants are asked to follow the file-naming and submission process indicated in instructions for each activity and/or assignment.

The file-naming structure for this course is:

LastnamefirstinitialACIS5504assignmentname

Ex: sheetzSACIS5504AssignmentOne.docx

Honor Code

We will be bound by the Graduate Honor Code. Please visit the **Graduate School Honor System's webpage (http://graduateschool.vt.edu/academics/expectations/graduate-honor-system.html)** for specific information regarding expectations and policies related to the Graduate Honor Code.

Course Support

Technical**:** The professor for this course does not provide technical support. Requests for technical support and/or Canvas support can be directed to 4Help by calling (540) 231-HELP (4357) or visiting the site at **https://vt4help.service-now.com/sp (https://vt4help.service-now.com/sp)** . There you can access the knowledge base documentation for most issues, or click "Guest Help" to enter a 4HELP ticket online

WebEx orientation is provided by the professor; however, support can be accessed online through **Virginia Tech's WebEx site (http://blogs.lt.vt.edu/webex)** .

Classroom Accessibility

Any student who has been confirmed by the University as having course accommodations must notify me as soon as possible, preferably during the first week of the course. For more information please go to the **Services for Students with Disabilities website (http://www.ssd.vt.edu/)** .

Academic Support Services:

Any student requiring academic support should investigate the **University's Academic Support resources (http://graduateschool.vt.edu/academics/what-you-need-to-graduate/academic-support-resources.html)** .

For complete information on student services at Virginia Tech, please visit the **website for the Division of Student Affairs** (http://www.dsa.vt.edu/students.php) .

Links to privacy statements for required software:

Canvas

https://www.canvaslms.com/policies/privacy (https://www.canvaslms.com/policies/privacy)

MS Office

https://privacy.microsoft.com/en-us/privacystatement (https://privacy.microsoft.com/en-us/privacystatement)

WebEx

https://www.cisco.com/web/siteassets/legal/privacy.html (https://www.cisco.com/web/siteassets/legal/privacy.html)

Notepad++

https://notepad-plus-plus.org/ (https://notepad-plus-plus.org/)

Course Summary:

Date	Details	
Sun Feb 23, 2020	**Project 1 Milestone 1: Entity Relationship and Relational Modeling** (https://canvas.vt.edu/courses/102788/assignments/759101)	due by 11:59pm
Sun Mar 1, 2020	**Project 1 Milestone 2: Normalization and SQL DDL** (https://canvas.vt.edu/courses/102788/assignments/759102)	due by 11:59pm
Mon Mar 16, 2020	**Assignment 1: Introduction to ER modeling and using a DBMS** (https://canvas.vt.edu/courses/102788/assignments/759098)	due by 11:59pm
Mon Mar 23, 2020	**Project 1 Milestone 3: Database Population and SQL DML** (https://canvas.vt.edu/courses/102788/assignments/759103)	due by 11:59pm
Mon Mar 30, 2020	**ACIS 5504 Mid Term Exam** (https://canvas.vt.edu/courses/102788/assignments/759096)	due by 11:59pm
Mon Apr 6, 2020	**Assignment #2 MySQL Database Implemention** (https://canvas.vt.edu/courses/102788/assignments/759093)	due by 11:59pm
Sun Apr 12, 2020	**Project 2 Milestone 1: Management Questions and DW Design** (https://canvas.vt.edu/courses/102788/assignments/759105)	due by 11:59pm
Mon Apr 20, 2020	**Project 2 Milestone 2: Extract, Transform, and Load** (https://canvas.vt.edu/courses/102788/assignments/759106)	due by 11:59pm

Date	Details	
Fri Apr 24, 2020	VT SPOT (https://canvas.vt.edu/calendar?event_id=387624&include_contexts=course_102788)	12am
	VT SPOT (https://canvas.vt.edu/calendar?event_id=387625&include_contexts=course_102788)	12am
Wed May 6, 2020	Project 2 Milestone 3: DW Reporting and Visualization (https://canvas.vt.edu/courses/102788/assignments/759107)	due by 11:59pm
Mon May 11, 2020	Final Exam (https://canvas.vt.edu/courses/102788/assignments/759094)	due by 11:59pm
	Project 1: Database Development Overview (https://canvas.vt.edu/courses/102788/assignments/759100)	
	Project 2: Data Warehouse Overview (https://canvas.vt.edu/courses/102788/assignments/759104)	