Database Programming
INFS 186
3 Credit Hours

Course Information

Course Description:

This course is designed to enable students to develop database applications using Microsoft Access. Subsequent to a brief survey of relational database techniques and methods, the emphasis will be on developing the necessary skills to design, create, and implement user-friendly front ends for relational databases. Using a database engine such as Microsoft Access, the course will concentrate on data modeling, database design including normalization, developing user-friendly forms and reports, and developing queries using SQL.

Course Objectives:

Upon successful completion of this course, students will:

- Understand the basics of relational databases and apply the concepts.
- Understand the programming techniques of macro coding.
- Translate client/user requirements into a data model.
- Design, develop and manipulate Access database objects.
- Recognize SQL, the value of queries, and embed SQL queries.
- Work with data files external to Access, including importing, exporting.
- Control report and forms through macros.
- Use program control by way of VBA coding.
- Understand error-handling techniques in VBA.
- Test and debug Macros.
- Write basic SQL commands to create and maintain databases.

Prerequisites and Co-requisites:

None

Course Topics:

- **Office 2010 and Windows 7: Essential Concepts and Skills (Optional)**
  - Introduction to the Windows 7 Operating System
  - Introduction to Microsoft Office 2010
  - Starting and Using a Program
  - Saving and Organizing Files
  - Screen Resolution
  - Additional Common Features of Office Programs
  - Moving, Renaming, and Deleting Files
  - Microsoft Office and Windows Help
- **Databases and Database Objects: An Introduction**
  - Designing a Database
  - Creating a Database
  - The Access Window

- o Creating a Table
- o Previewing and Printing the Contents of a Table
- o Creating Additional Tables
- o Importing Data from Other Applications to Access
- o Additional Database Objects
- o Database Properties
- o Special Database Operations
- **Querying a Database**
  - o Creating Queries
  - o Sorting
  - o Joining Tables
  - o Creating a Form for a Query
  - o Exporting Data from Access to Other
  - o Adding Criteria to a Join Query
  - o Calculations
  - o Crosstab Queries
- **Maintaining a Database**
  - o Updating Records
  - o Filtering Records
  - o Changing the Database Structure
  - o Mass Changes
  - o Validation Rules
  - o Changing the Appearance of a Datasheet
  - o Multivalued Fields in Queries
  - o Referential Integrity
  - o Ordering Records
- **Creating Reports and Forms**
  - o Report Creation
  - o Multi-table Reports
  - o Form Creation
  - o Mailing Labels
- **Multi-table Forms**
  - o Adding Special Fields
  - o Updating the New Fields
  - o Multi-table Form Techniques
  - o Object Dependencies
  - o Date/Time, Memo, and Yes/No Fields in Queries
  - o Datasheets in Forms
  - o Creating a Multi-table Form Based on the Many Table
- **Advanced Report Techniques**
  - o Additional Tables
  - o Creating Reports in Design View
- **Using SQL**
  - o SQL Background
  - o SQL Queries
  - o Sorting
  - o Grouping
  - o Joining Tables
  - o Comparison with Access-Generated SQL
  - o Updating Data through SQL

- be **Advanced Form Techniques**
    - Creating a Form with Combo Boxes and Command Buttons
    - Creating a Multi-Page Form
    - Using the Arrange Tab on Forms and Reports
- **Macros, Navigation Forms, PivotTables, and Pivot Charts**
    - Creating and Using Macros
    - Creating and Using a Navigation Form
    - Data Macros
    - PivotTables and Pivot Charts
- **Administering a Database System**
    - Data Type Parts
    - Web Databases
    - Converting Databases
    - Microsoft Access Tools
    - Navigation Pane
    - Table and Database Properties
    - Special Field Properties
    - Creating and Using Indexes
    - Automatic Error Checking
    - Encrypting a Database
    - Digital Certificates
    - The Trust Center
    - Locking a Database
    - Splitting a Database
- **Database Design**
    - Entities, Attributes, and Relationships
    - Relational Databases
    - Database Design
    - Scryps Distributor
    - Normalization
    - Special Topics
    - **Specific Course Requirements:**
    - This course is setup so that you will be covering the material in the textbook in sequential order. The course is structured so that we will have you will have:
    - Reading assignments, typically each week
    - 4 Discussions
    - 11 Quizzes
    - 10 Projects
    - Midterm Exam
    - Final Exam
    - The deadlines for all of the above activities are located in the "Calendar".
    - For information on specific Module assignments go to the Module Checklist called "Module _X_ Instructions" located in the "Course Content" section of the course or it canaccessed from the Checklist link at the top right portion of the web page. The Checklist will give you all of the information you will need to complete your assignments for each Module.
    - You will use the Dropbox to submit your projects, and it is a good idea to save a copy of each submitted assignment, for your reference. The discussion board will be used for class discussions, and your participation is essential. Your posted responses will becontinuously monitored and threaded discussions will be on-going. All of the Quizzes

and Exams are located in the Assessment link at the top of the web page or you can find a link to them from the "Module *X* Resources" section of each Module.
o Notes for the course:

1. Note: You do not need Windows 7 for this course but you will need a Windows OS to run Microsoft Access. You will need a copy of Microsoft Access 2010, which is included in Microsoft Office 2010 Professional Edition. A 180-day free trial of Microsoft Office comes with your text, if you purchased it from the RODP Bookstore. If you want to buy Microsoft Office you can get a student discount on Office 2010 from Microsoft by following this link.

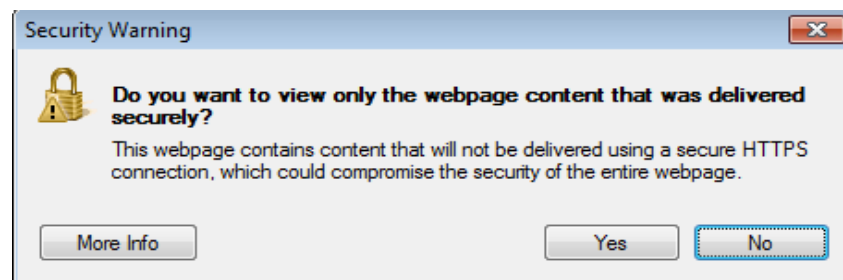http://www.microsoftstore.com/store/msstore/pd/productID.229301900

2. Note: The Training Video's referred to in this course are optional training materials. These videos are provided by Microsoft training and YouTube. The Microsoft videos may require you to download and install software to make the videos play on your computer. If you are unable to install the software and play the video, it will allow you to read a text version of the training video.
3. Software Note: In order to view some of the videos in this course you may need to download and install some special software.
   a. Microsoft Silverlight can be downloaded at this link.

http://www.microsoft.com/getsilverlight/Get-Started/Install/Default.aspx

   b. Mac OSX users will need Flip4Mac and it can be downloaded at this link.

http://www.microsoft.com/download/en/details.aspx?id=9442

4. Security Warning Message Box: If you get this Security Warning message box when displaying content in this course just select the "No" button. It just means that some content in the web page is not using HTTPS.

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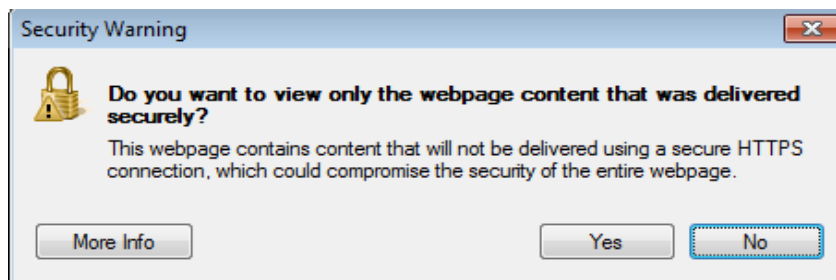- Midterm Exam
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Textbooks, Supplementary Materials, Hardware and Software Requirements

Required Textbooks:

Please visit the Virtual Bookstore to obtain textbook information for this course: http://rodp.bkstr.com

Supplementary Materials:

You do not need Windows 7 for this course, but you will need a copy of Microsoft Access 2010, which is included in Microsoft Office 2010 Professional Edition. A 180-day free trial of Microsoft Office comes with your text, if you purchased it from the RODP Bookstore. If you want to buy Microsoft Office you can get a student discount on Office 2010 from Microsoft by following this link.

Hardware Requirements:

The minimum requirements can be found at
http://www.tn.regentsdegrees.org/students/hardware_software.htm.

Software Requirements:

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http://www.tn.regentsdegrees.org/students/hardware_software.htm.

You will need a copy of Microsoft Access 2010. Also you do not need Windows 7 for this course but you will need a Windows OS to run Microsoft Access.

Instructor Information

Please see the separate page inside the course to find instructor contact information as well as a statement of virtual office hours and other communication information.

Assessment and Grading

Testing / Grading Procedures:

Testing:
Students are expected to complete their own work, unless group projects are designated. Exams will not be proctored, but will be given online. After the exam is made available, a specific deadline for completion will be set (see course calendar for details).

Grading Procedures:
There will be four discussions, eleven quizzes, ten projects, a midterm exam and a final exam. Each quiz will cover a specific chapter of the text. The midterm exam will cover Access chapters 1 through 5 and the final exam will cover Access chapters 6 through 11. Incomplete work will be graded, with those parts incomplete marked as incorrect. Work that is not turned in will receive a grade of 0 for that assignment. It is in your best interest to read all assigned chapters and build the Camashaly Design database that is covered in each chapter.

Grading Scale:

Point Range	Assigned Grade
608 - 547 Points	A
546 - 486 Points	B
485 - 425 Points	C
424 - 364 Points	D
Under 364 Points	F

Assignments and Participation

Assignments and Projects:

A list of assignments and their due dates can be seen on the course calendar. The details and specifics will be supplied in the checklist; you can use the "Module *X* Instructions" link in each module for more information on your assignments.

List of Graded Assessments:

Activity	Total Points
Discussions 4 @ 25 points each	100
Quizzes 11 @ 20 points each	220
Projects 10 @ 20 points each	200
Mid Term Exam	40
Final Exam	48
Total Points	**608**

Class Participation:

As aforementioned, reading the required text and following threaded discussions are a major part of this course and students are required to participate. In addition, emailing the instructor (inside the course shell) is another preferred method of teacher/student contact. If you have questions or need clarity, feel free to email me or other students for a different perspective. Respond promptly when receiving email from the instructor and feel free at any time to chat with other students who may be logged on at the same time as you are.

Punctuality:

The calendar lists deadline dates as course milestones to keep students on track. Since this is an asynchronous environment, you are responsible for managing your time wisely and staying abreast of the proposed course schedule.

Late Policy:

Typically late work is not accepted and it is the responsibility of the student to turn in all work on time. If

an extenuating circumstance arises notify the instructor immediately and the instructor will work with you to help you resolve you problem.

Course Ground Rules

Academic Dishonesty:

Standards of Conduct: Students are required to adhere to the same professional, legal and ethical standards of conduct online as on campus. In addition, students should conform to generally accepted standards of "netiquette" while sending e-mail, posting comments to the discussion board, and while participating in other means of communicating online. Specifically, students should refrain from inappropriate and/or offensive language, comments and actions.

Academic Integrity/Academic Honesty: In their academic activities, students are expected to maintain high standards of honesty and integrity. Academic dishonesty is prohibited. Such conduct includes, but is not limited to, an attempt by one or more students to use unauthorized information in the taking of an exam, to submit as one's own work, themes, reports, drawings, laboratory notes, computer programs, or other products prepared by another person, or to knowingly assist another student in obtaining or using unauthorized materials. Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions, which may be imposed through the regular institutional procedures as a result of academic misconduct, the instructor has the authority to assign an "F" or zero for an activity or to assign an "F" for the course. Read more about How To Avoid Plagiarism.

Other Course Rules:

Students are expected to:

- Learn how to navigate in D2L
- Keep abreast of course announcements
- Use the assigned course management (D2L) e-mail address rather than a personal e-mail address
- Address technical problems immediately
- Observe course netiquette at all times

Guidelines for Communications

Email:

- Always include a subject line.
- Remember without facial expressions some comments may be taken the wrong way. Be careful in wording your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.
- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.

- Respect the privacy of other class members

Discussion Groups:

- Review the discussion threads thoroughly before entering the discussion. Be a lurker then a discussant.
- Try to maintain threads by using the "Reply" button rather starting a new topic.
- Do not make insulting or inflammatory statements to other members of the discussion group. Be respectful of others ideas.
- Be patient and read the comments of other group members thoroughly before entering your remarks.
- Be cooperative with group leaders in completing assigned tasks.
- Be positive and constructive in group discussions.
- Respond in a thoughtful and timely manner.
- More information is available in this link to discussion guidelines.

Chat:

Chat is seldom used in RODP. If for some reason it is opened:

- Introduce yourself to the other learners in the chat session.
- Be polite. Choose your words carefully. Do not use derogatory statements.
- Be concise in responding to others in the chat session.
- Be prepared to open the chat session at the scheduled time.
- Be constructive in your comments and suggestion

Web Resources:

- Columbia Guide to Online Style by Janice R. Walker and Todd Taylor
- Citation Styles Online http://www.bedfordstmartins.com/online/cite6.html

Library

The Tennessee Virtual Library is available to all students enrolled in the Regents Degree Program. Links to library materials (such as electronic journals, databases, interlibrary loans, digital reserves, dictionaries, encyclopedias, maps, and librarian support) and Internet resources needed by learners to complete online assignments and as background reading must be included in all courses.

Plagiarism

What is Plagiarism?

Plagiarism is representing someone else's intellectual property as your own. You put yourself at risk of plagiarizing when you fail to adequately cite the original source material from which you took words and ideas.

Students With Disabilities

Qualified students with disabilities will be provided reasonable and necessary academic accommodations

if determined eligible by the appropriate disability services staff at their home institution. Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services staff at the home institution. It is the student's responsibility to initiate contact with their home institution's disability services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Syllabus Changes

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes both by individual email communication and posting both notification and nature of change(s) on the course bulletin board.

Technical Support

Telephone Support:

If you are having problems logging into the course, timing out of the course, using the course web site tools, or other technical problems, please visit the AskRODP Customer Support web page at http://askrodp.custhelp.com/ or call the AskRODP Help Desk at 1-866-550-RODP**1-866-550-7637** (toll free)or go to the AskRODP website at:**http://askrodp.custhelp.com**