**NMETH 529 - Database Design**

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UW Biobehavioral Nursing and Health Systems
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**Description:** Introduction to relational database theory and technology from a health informatics perspective. Focuses on transactional database theory, architecture and implementation in a socio-technical context. Analyses database applications used in clinical environments. Introduces knowledge bases and data warehouses. Prerequisite: NMETH 528. Credits: 3

**Objectives**

1. Data modeling with entity relationship diagrams (ERDs)
2. Logical database modeling and proper primary and foreign key selection
3. Database normalization to maintain data integrity
4. To use three- tier application architecture to analyze a database applications used in clinical setting
5. To write simple queries using both query by example (QBE) and structured query language (SQL)
6. To design and implement a database application component

**Contact Information | Office Hours**
My email is swolpin@u.washington.edu. My office phone is 206-543-5164. I am often on Windows Live Messenger (neckogato@hotmail.com). As much as possible - I will try to accommodate special requests for office hours. I will always assume that other students can join in (view) these office meetings unless you specifically request a private meeting. I will not discuss private issues (like your grades) unless other students are present or unless you initiate the conversation.

**In General**
We will be focusing on basic computer skills in the first week and a little on db design. The beginning of the course will be heavy on access and light on web databases. Over time we will switch emphasis.

**Lecture**
There will be one lecture via Connect Pro Live from 1530 - 1700 on Tuesdays. One exception will be our second class on 4/6, this will start one hour late at 1630! This is an optional lecture to watch in real-time, but you will need to watch it to complete your assignment. While it may be tempting to try to follow me in real-time, and frustrating to just sit back and watch, please just sit back and watch and then re-play it later as you work on your assignments. There simply is not enough time. If you would like to share desktops and get one-on-one help, please contact me with some of your available times.

**Help related to Moodle, Citrix, or Connect Pro Live**Please email tier@son.washington.edu. One of the biggest complaints last year was that the video was our of sync with the audio and that the resolution was also difficult within CPL. We are on a new server this year, however if you encounter problems please direct your questions/complaints to tier@uw.edu ("NMETH 529 CPL" and/or "NMETH 529 Moodle" in the subject line)
**Book**
This is very optional. Buy it if you feel better having a book or if you might need a door stop after the end of the quarter. Otherwise - we will primarily be focused on web materials.
ISBN: 1423902017
Database Systems: Design, Implementation, and Management 8th Edition
Author: Carlos Coronel, Peter Rob

**Other Materials**
There will be a variety of software needed, but in almost all cases you can acquire open source or trial versions. You will need a web hosting account capable of supporting php and mysql. These can be obtained for free from UW but it will be easier if you pay ~$5 to a 3rd party web host. Details will be provided in Week 2.

**Prerequisites**
All students in this course must have completed NMETH 528 taught by Dr. Clark Johnson. A basic foundation of computer skills is expected, your assignments during the first week will focus on these skills and if you do not have them, or are unable to learn them, you will be asked to leave the course. You must be able to independently search for solutions. Last, you must also be willing to have a great deal of patience with yourself and with computers on this course.

**Course Pacing**
Students will be expected to do readings, work with software, and submit assignments every week. In most cases you can not work ahead. While this course is primarily online, it is not an independent study or self-paced course.

**Software**
We will be using Microsoft Access 2007 in this course, if you do not have a copy of this software you can RDP into a citrix server hosted by SON and use Access ([https://citrix.son.washington.edu](https://citrix.son.washington.edu/)). I don't recommend this as a number of students had problems last year. If you have problems with the citrix server please contact TIER at tier@uw.edu, I do not have any ability to troubleshoot the citrix server. Problems with the server are not valid as excuses for not turning assignments in on time. I would not spend a lot of money on Access; use it in a lab, find an educational price, borrow a friend's computer.

Other assignments can be accomplished with any software you want - I will sometimes make recommendations and you may be asked to submit your assignment in a format that I can read. For example, if you use some esoteric word processing program I will likely ask that you submit your assignment as an exported pdf or rtf document.

**Banging your head**
You will be challenged with technology in this course. One of the key skills you will need to learn, if you haven't already, is how to both be patient with surmounting these challenges and also how to find answers. **I cannot function as your technical support person.** In most cases the challenges you encounter will have been explored by many, many people before you. And quite often you can find their questions posted on discussion boards across the web with very good questions. There are also many real life humans around you that can help (chocolate helps). **Please don't ask me for technical support related to your specific computer set-up, software woes, etc.** Independently searching for solutions is a skill you will need after the course is over and it will allow me to focus on teaching rather than why your version of Access will not install on your work computer.

You are welcome to present issues related to your source code or items **within** the software or languages we are using. These should be posted in the help forum specific to that week's assignment. Not by email! When you do, please preface your question with the steps you have taken to try to solve the problem through other avenues. Screenshots and source code should be attached when appropriate. If you post a vague question with insufficient detail, I reserve the right to deduct 5% from the total points possible for that assignment.

**Grading**
There are 10 weeks and each week is worth 10%. 100 points will be distributed across a variety of learning opportunities each week meaning you can earn 1000 points total during the course. Grading is not done on a curve. At the end of the course your points will be divided by 10 to create percentages and used with the rubric below. For more information please see the grading page on the [SON website](http://www.grad.washington.edu/Acad/gsmemos/gsmemo19.htm).

|  |  |
| --- | --- |
| 4.0 | 95%-100% |
| 3.9 | 94% |
| 3.8 | 93% |
| 3.7 | 92% |
| 3.6 | 91% |
| 3.5 | 90% |
| 3.4 | 89% |
| 3.3 | 88% |
| 3.2 | 87% |
| 3.1 | 86% |
| 3.0 | 85% |
| 2.9 | 84% |
| 2.8 | 83% |
| 2.7 | 82% |
| 2.6 | 81% |
| 2.5 | 80% |
| 2.4 | 79% |
| 2.3 | 78% |
| 2.2 | 77% |
| 2.1 | 76% |
| 2.0 | 75% |

**Extra Credit**
You may earn up to 100 extra credit points during the quarter. These opportunities may be defined throughout the quarter but I also reserve the right to arbitrarily award extra credit for good deeds (e.g. students helping students in the help forum) and for exceptional work.

**Due Dates**
All assignments are due on Tuesdays 1500. Students will not be able to 'work ahead' in this course - thereby ensuring that everyone is on the same page. The subsequent week's materials and assignments will be made available on Tuesday by 1900, providing students with a one week to review material and complete assignments. In some cases, smaller parts of the week’s assignment may be posted by Wednesday at 1130.

**Submitting Assignments**
Always download and double check what you uploaded. Students often submit the wrong file (especially the lock file that Access generates). Sometimes files get corrupted. **There will be no second opportunity to submit a file should your original file be incorrect.** *All files that are uploaded need to follow good naming conventions, otherwise points will be deducted. Check your work!*

**One Free Late Pass**
Late assignments are never accepted unless accompanied by the 'free late pass'. Each student has one late pass. Using this allows one assignment to be turned in up to 48 hours late without penalty. Simply say in an email 'I would like to use my late pass', **there is no need to explain why**. Please remember there is only one of these passes and if you have some type of emergency later in the course it will not be possible to postpone due dates. Assignments submitted after a due date without a pass will still be reviewed however no points will be awarded. Late passes are non-transferable. You will not receive more than 80% credit for an assignment submitted with the late pass. The late pass may be used for all or part of the week’s assignment. Since the source code will be posted - it is important that you have added some custom tweaks to the assignment and not simply posted the source code without edits or understanding.

**Naming Conventions**
All files should be prefixed with the date (yyyymmdd) followed the week and assignment number. Your three initials should come last. A dash or underscore should separate each section. So, assignment number two in week 1, if it were a word document submitted on April 6, would read: 20100406-W1A2-SEW.docx. I reserve the right to deduct 5% from the total points possible for any files submitted that do not follow this naming convention. This is true for naming zip files as well as the files within.

**Plagiarism**
Don't do it. You will be dismissed from the class with a failing grade and reported to Academic Services. No exceptions. For more information please read the [UW website](http://depts.washington.edu/grading/issue1/honesty.htm) devoted to this topic.

**Small print**
I reserve the right to change this document.

**WEEKLY SCHEDULE**

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| **Week** | **Topics** |
| Week 1 | Introduction to the course; ‘Spreadsheet Syndrome’; Basic Skills |
| Week 2 | Intro to DBMS, Relational Model, ER Design, and Database vs. File System |
| Week 3 | Database vs File System, Database Environment and Functions, and Keys. Intro to meta data, forms and subforms, lookups, HTML |
| Week 4 | Database Normalization, Database Skills (combo boxes, fixing errors). HTML: Standard structure, validation, relative links, forms, PHPMyAdmin. |
| Week 5 | SQL in Access for Reporting. Queries. MySQL tables and creating home pages. |
| Week 6 | Queries in Access; Passing data between web pages |
| Week 7 | PHP |
| Week 8 | Wrap up of PHP; Access radio button controls and Group By statements. |
| Week 9 | Planning the final project and beginning development |
| Week 10 | Completing the final project.  |