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CSCI 172.50: Introduction to Computer Modeling

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Computer Modeling CSCI 172 Syllabus Spring 2018

CSCI 172 Section 50
Instructor: William Knight
Office: SS 403
Office Hours: MWF 3:00 – 4:00 pm or by appt.
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URL: http://umonline.umt.edu/

Overview:

This class focuses on using the computer as a modeling tool for analysis of data sets. The software applications we will be using for data modeling are spreadsheets and databases. We will utilize the Microsoft spreadsheet Excel and the Microsoft database Access to implement data modeling. These are the most common spreadsheet and desktop database applications in use today. The **2016 version** of Microsoft Excel and Microsoft Access are required to complete activities for this course (available on computers in student classrooms and campus labs).
The course uses a **required** textbook authored by Poasty & Grauer and published by Pearson Education. It is bundled with the MyITLab online simulation software package. This application provides electronic exercises using a simulation of the Microsoft Office productivity suite. All students are welcome to utilize the computing labs and classrooms available on campus. Both an electronic copy and printed copy of the textbook bundle are available for the course. MyITLab is an important component of the printed textbook bundle. There are many versions of this particular textbook. Be sure to purchase the version with the MyITLab bundle. The ISBN listed will accurately identify this bundle.

- Overview of Excel
- Functions in Excel
- Graphs in Excel
- Overview of Access
- Databases, tables, rows, columns and normalization
- Database forms
- Logical Reasoning and Critical Thinking

Upon completing this course, a student will be able to:

Create, manipulate, and format data in a spreadsheet.
- Create and use formulas, including conditional formulas.
- Use a spreadsheet to do basic descriptive statistics.
- Design models for visualizing data including charts.
- Work with large tables.
- Design a spreadsheet to implement a computer model.
- Work with database tables and queries.
- Understand how table relationships are used.

Attendance:

Attendance is not mandatory as it is an online course, however if you cannot complete an assignment for any reason, it is your responsibility to contact me and I will determine if you can make up the work. Please give me advance notice of any absences, and I will provide you with the same courtesy.

Class is completely online. However, we have a number of optional labs if you need in-person help. **Lab times will be determined in the first week of the course.**

Finally, all exams will be held during one of these lab times. So, make sure you can make at least one of the lab times.

Grading:

Assessment
Homework 25.0%
Assessments 30.0%
Unit Projects 25.0%
Final Exam 20.0%

All Assignments will be submitted through MyITLab. It will grade you automatically. If you have trouble with your submission, please send a message to me at william.knight@umontana.edu

Grading Scale

100-90 A, A-   79-70 C+, C, C-   59-and beyond F
89-80 B+, B, B-   69-60 D+, D, D-

P/NP – pass/no pass, 70 or greater is passing determined by Computer Science Department policy, which is a C or better.

Late Assignments:
- I typically do not accept late assignments. Sorry for the inconvenience.

Requirements

- There are two choices for the textbook. PLEASE ONLY CHOOSE ONE
    o **Paper Hard Copy Textbook Option** Custom Edition: Exploring Microsoft Office 2016, Volume 1; Poatsy & Grauer; Pearson Education 2016; ISBN 9781323637692.
        ▪ *Important Note:* This is a custom textbook bundle. It includes the required MyITLab Access Code subscription. PLEASE, ONLY PURCHASE THIS TEXT FROM THE UM BOOKSTORE!
    o **Electronic Textbook Option**
        ▪ Register directly through the MyITLab website – www.pearsonmylabandmastering.com. Pay with credit card. No transaction needed with UM Bookstore.
- MyITLab Course ID

- **o** MyITLab requires a unique Course ID for students to register for MyITLab associated with this course. This ID will be supplied to students by the instructor. MyITLab student registration instructions are available on the course home page in Moodle via the **Student Registration Instructions** link.
- A computer with the Microsoft Excel/Access 2016. Included with the textbook bundle is a 180-day evaluation copy of the software. U of M students are eligible for a free version of Microsoft 365 ProPlus. Call 406-243-4357 to inquire.

Suggestions:
- It would be beneficial to read and ask as many questions as you can.
- Feel free to set up an appointment if you need help. I am here to help you understand and do well.

Collaboration:
- I encourage you all to work together through problems – make sure you comment who you worked with at the top of the page, but copying and plagiarism will not be tolerated. If you are caught cheating, I will give you an F for the course.
- Please refer to the Student Conduct Code regarding this issue.

Incompletes:

"Incomplete for the course is not an option to be exercised at the discretion of students. In all cases it is given at the discretion of the instructor…." Some guidelines for receiving an incomplete are listed in the catalog which include having **a passing grade up to three weeks before the end of the semester** and being in attendance. "**Negligence and indifference are not acceptable reasons**." Also note that there may be financial aid implications.

Late Drops:

The University's policy on drops after **45** days of instruction is very specific. The Computer Science Department follows this policy rigorously. There are five circumstances under which a late drop might be approved: registration errors, accident or illness, family emergency, change in work schedule, no assessment of performance in class after this deadline. Except in very unusual circumstances, I will only approve late drops if there is documented justification for one of these circumstances.

Disabilities:

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at http://umt.edu/dss/.

Class Etiquette:
- Be respectful of your fellow classmates.
- Call me anytime if you have a question.
- Profanity and Obscenity will not be tolerated in class or assignments.

Special Dates:

- Jan 22, 2018   Classes Begin

- Feb 19, 2018   Presidents Day – No Class

- Mar 26 - 30, 2018   Spring Break – No Class

- May 4, 2018   Last Day of Regular Classes

- May 7–11   Final Exams

Tentative Schedule:

Unit 1 Introduction (Introduction, Security, Word Chapter 3)
1.1 Introduction to Course
1.2 Introduction to Data Tables
1.3 Computer Security

Unit 2 Excel Chapters 1 and 2)
2.1 Introduction to Spreadsheets - Basics
2.2 Introduction to Spreadsheets – Formulas
2.3 Functions: Aggregate Functions and Logic Lookup
2.4 Function: Financial Functions and Range Names

Unit 3 Data Visualization & Managing Large Data Sets (Excel Chapters 3 and 4)
3.1 Introduction to Charting
3.2 Chart Design, Chart Layout, and Sparklines
3.3 Large Datasets and Data Tables
3.4 Table Manipulation and Aggregation; and Conditional Formatting

Unit 4 Introduction to Databases, Queries, and the Relational Model (Access Chapters 1 and 2)
4.1 Introduction to Databases, Filters, and Sorts
4.2 Multiple Table Databases and Relationships
4.3 Queries
4.4 The Relational Model

Unit 5 Calculations, Forms, and Reports (Access Chapters 3 and 4)
5.1 Calculations and Aggregate Functions
5.2 Expression Building
5.3 Forms
5.4 Reports

Unit 6 Data Analysis (Excel Chapters 5, 6, and 8)
6.1 Outlines and Subtotals
6.2 Pivot Tables and Pivot Charts

6.3 What-If Analysis
6.4 Data Analysis from Quantitative Data Sets
6.5 Nominal Data and Frequency Distribution

Week 1: Course Introduction
        Microsoft Word Chapter 3
Week 2: Digital Security and Privacy
        Microsoft Excel Chapter 1
Week 3: Microsoft Excel Chapter 1
        Microsoft Excel Chapter 2
Week 4: Microsoft Excel Chapter 2
        Microsoft Excel Chapter 3
Week 5: Microsoft Excel Chapter 3
Week 6: Microsoft Excel Chapter 4
Week 7: Microsoft Access Chapter 1
Week 8: Microsoft Access Chapter 2
Week 9: Microsoft Access Chapter 2
        Microsoft Access Chapter 3
Week 10: Spring Break
Week 11: Microsoft Access Chapter 3
        Microsoft Access Chapter 4
Week 12: Microsoft Access Chapter 4
        Microsoft Excel Chapter 5
Week 13: Microsoft Excel Chapter 5
        Microsoft Excel Chapter 6
Week 14: Microsoft Excel Chapter 6
        Microsoft Excel Chapter 8
Week 15: Microsoft Excel Chapter 8
Week 16: Finals Week