CSCI 172.50C: Introduction to Computer Modeling

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CSCI 172 Introduction to Computer Modeling
Section
Credits: 3
Prerequisites: M 90 Introductory Algebra
Syllabus Last Revised: Spring, 2015

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All emails to the instructor must contain “CSCI172” in the subject line.

Course Description
Problem solving and data modeling using computer productivity software. Emphasis using spreadsheets and databases for data analysis. Formal presentation of results.

Course 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'll 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 2013 version of MS Excel and MS Access are needed 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 Prentice-Hall. It is bundled with the online simulation software package MyITLab. This application provides electronic exercises using a simulation of the MS 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 lots of versions of this particular textbook. Be sure to purchase the version with the MyITLab bundle. The ISBN listed will accurately identify this bundle.

Learner Outcomes
- 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.

Textbook
There are two choices for the textbook. PLEASE ONLY CHOOSE ONE
Paper Hard Copy Textbook Option
*Custom Edition Office 2013 with MyITLab and Office 2013 Bundle; Poatsy & Grauer; Pearson Publishing 2013; ISBN 978-1-2692-9832-2*  Important Note: This is a custom textbook bundle. It includes the required MyITLab subscription. PLEASE PURCHASE FROM THE UM BOOKSTORE ONLY!

Electronic Textbook Option
Register directly through the MyITLab website – [http://pearsonmylab.com](http://pearsonmylab.com)  Pay with credit card. No transaction needed with UM Bookstore.

MyITLab Course ID
MyITLab requires an unique Course ID to register as a student in our class. Our Course ID is **gallagher37725 (CSCI 172-50C Sp15 – LaBonty)**.

Other Required Materials
A computer with the **Microsoft Excel/Access 2013** will be required. Included with the textbook bundle is a 180 day evaluation copy of the software.

UM campus computer labs are another option for using MS Access/Excel 2013 for local students.

Assessment
Grades will be weighted and graded as follows:

<table>
<thead>
<tr>
<th>Assessment Area</th>
<th>Weighting</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of Chapter Homework</td>
<td>25%</td>
<td>90-100% A</td>
</tr>
<tr>
<td>End of Chapter Assessments</td>
<td>30%</td>
<td>80-89% B</td>
</tr>
<tr>
<td>Unit Projects</td>
<td>25%</td>
<td>70-79% C</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>60-69% D</td>
</tr>
</tbody>
</table>

Academic Conduct
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and /or a disciplinary sanction by The University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: [http://life.umt.edu/vpsa/student_conduct.php](http://life.umt.edu/vpsa/student_conduct.php)

Using the Web to research materials and concepts is an integral part of learning in the twenty-first century. Studying with other students is a productive method of learning. A certain amount of collaborating on Concepts with other students and using resources found on the Internet in an assignment is recommended. Copy and paste is not acceptable. It is expected that each student will input his/her assignment into the computer, and each student must be able to explain any assignment turned in.

**Collaboration on End of Chapter Assessments (Grader Activities) is strictly forbidden. Collaboration on the Final Exam is strictly forbidden.**

**Never share any of the Grader Project files you download from MyITLab.** This course will be utilizing the MyITLab integrity checking tool. If files are shared an Integrity Violation will be reported by MyITLab to your Instructor. For this class, it will be considered plagiarism and a violation of the Student Conduct Code. Both students will receive a 0 for that Grader Project. Further violation will result in more serious consequences.
Dropping and Adding Courses or Changing Sections, Grading or Credit Status
University Policy for dropping courses or requesting grading/credit status changes can be found in the catalog: http://www.umt.edu/catalog/acad/acadpolicy/default.html Students should become familiar with all academic policies found in the catalog.

Incomplete Grades (according to UM catalogue):
The student has been in attendance and doing passing work up to three weeks before the end of the semester, and for reasons beyond the student’s control and which are acceptable to the instructor, the student has been unable to complete the requirements of the course on time. Negligence and indifference are not acceptable reasons.

Disability Accommodations:
Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me if you will be requesting an accommodation. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at http://www.umt.edu/dss or call/text 406.243.2243.

Notes for Online Students
We will utilize two Learning Management System (LMS) software packages for the course: Moodle (UMOnline) and MyITLab (Pearson-textbook publisher). Moodle is the official LMS for the course content, grades, schedules, lessons, etc. The MyITLab LMS software platform is used for homework exercises, chapter assessments, and the final exam.

All homework, assessments, and unit projects have a due date. You are expected to have submitted your assignment on-time. Submission of assignments or projects will not be accepted unless there are extenuating circumstances. Acceptance of late submissions is at the discretion of the instructor. Please have a very good reason for your request.

The final exam will be comprehensive. It will assess knowledge and concepts rather than skills. Final exam date will be determined later in the semester.

How to Succeed in This Class
“Wow a section on how to succeed in the class? What a great idea. I’ll be sure to pay close attention” states the non-assuming, enthusiastic student 😊

Here’s a short list of tips from your instructor:
“Wow a section on how to succeed in the class? What a great idea. I’ll be sure to pay close attention” states the non-assuming, enthusiastic student 😊

Here’s a short list of tips from your instructor:

1. COMPLETE THE INTERACTIVE SIMULATIONS FOUND IN MYITLAB: These Homework Assignments provide a great introduction to the material and demonstrate the skills and knowledge required to complete Assessment Activities and Unit Projects.

2. READ THE BOOK. We have a great textbook which clearly explains topics involving spreadsheets and databases. It is available in a hard copy form from the UM bookstore and in an electronic format through MyITLab. Book readings are assigned to assist you in developing vocabulary and understanding concepts. Students will be assessed on this knowledge through a comprehensive final exam given at the end of the semester.
3. **COMPLETE ALL THE HOMEWORK, ASSESSMENT ACTIVITIES, and UNIT PROJECTS.** These homework exercises and assessments are found in MyITLab. Unit Projects are found in Moodle. CSCI 172 is a project-based course. Completion of these activities account for 80% of your final grade! The Grader Projects can be completed multiple times.

4. **CHOP WOOD.** This is a computer class. What does this mean? Well, chop wood is simply a metaphor for doing the work. Due dates for activities are posted in the Moodle shell. These will be reinforced through weekly email communications from the instructor. We’ll follow the curriculum schedule found on the last page of the syllabus. Don’t put work off until the weekend. Follow the schedule. Chop the wood and get your work done as prescribed and you’ll have a great experience!

5. **EMERGENCY SATURDAYS.** Deadlines for this class have been set weekly on Saturday at 6:00 PM. Over time this seems to work best for most students who have work, family, or an occasional emergency activity. While I am rarely available on Saturday, it is recommended that you begin your work early in the week and avoid the “frustration” of trying to complete everything on Saturday—that is never fun! Contact me during the week so I can help you solve problems. Use the “Emergency Saturdays” as an exception rather than the rule.

Good luck this semester and I hope you enjoy the course!

**Topic Outline** (subject to revision)

Unit 1 Introduction (Introduction, Security, Word Ch. 3, & Excel Ch. 1-2)
1.1 Introduction to Course
1.2 Introduction to Data Tables
1.3 Computer Security
1.4 Introduction to Spreadsheets - Basics
1.5 Introduction to Spreadsheets – Formulas
1.6 Functions: Aggregate Functions & Logic Lookup
1.7 Function: Financial Functions & Range Names

Unit 2 Data Visualization & Managing Large Data Sets (Excel Ch. 3-4)
2.1 Introduction to Charting
2.2 Chart Design, Chart Layout, & Sparklines
2.3 Large Datasets and Data Tables
2.4 Table Manipulation and Aggregation; and Conditional Formatting

Unit 3 Introduction to Databases, Queries, and the Relational Model (Access Ch. 1-2)
3.1 Introduction to Databases, Filters, and Sorts
3.2 Multiple Table Databases & Relationships
3.3 Queries
3.4 The Relational Model

Unit 4 Calculations, Forms, and Reports (Access Ch. 3-4)
4.1 Calculations & Aggregate Functions
4.2 Expression Building
4.3 Forms
4.4 Reports

Unit 5 Analysis Tools (Excel Ch. 5-6)
5.1 Outlines and Subtotals
5.2 Pivot Tables and Pivot Charts
5.3 What-If Analysis
5.4 Data Analysis from Quantitative Data Sets
# Curriculum Calendar – Spring Semester 2015

(January 19, 2015 – subject to revision)

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 26-31</td>
<td>1     Introduction</td>
<td>Introduction/Lesson 1.1</td>
<td>Lesson 1.2</td>
<td></td>
</tr>
<tr>
<td>FEB 2-7</td>
<td>2     Excel - Ch. 1</td>
<td>AA1 Lessons 1.3, 1.4</td>
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</tr>
<tr>
<td>FEB 9-14</td>
<td>3     Excel - Ch. 2</td>
<td>Lesson 1.5</td>
<td>AA2 Lessons 1.6</td>
<td></td>
</tr>
<tr>
<td>FEB 16-21</td>
<td>4    Excel - Ch. 3</td>
<td>Presidents Day Lesson 1.7/AA3</td>
<td>Unit Project 1</td>
<td></td>
</tr>
<tr>
<td>FEB 23-28</td>
<td>5     Excel - Ch. 3</td>
<td>Lesson 2.1</td>
<td>Lesson 2.2</td>
<td>AA4</td>
</tr>
<tr>
<td>MAR 2-7</td>
<td>6     Excel - Ch. 4</td>
<td>Lesson 2.3</td>
<td>Lesson 2.4</td>
<td>AA5</td>
</tr>
<tr>
<td>MAR 9-14</td>
<td>7     Access - Ch. 1</td>
<td>Unit Project 2</td>
<td>Lesson 3.1</td>
<td>Lesson 3.2</td>
</tr>
<tr>
<td>MAR 16-21</td>
<td>8     Access - Ch. 2</td>
<td>AA6</td>
<td>Lesson 3.3</td>
<td>Lesson 3.4</td>
</tr>
<tr>
<td>MAR 23-28</td>
<td>9     Spring Break</td>
<td>AA7</td>
<td></td>
<td>Unit Project 3</td>
</tr>
<tr>
<td>MAR 30-APR 3</td>
<td>10   Spring Break—Yea!!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APR 6-11</td>
<td>11    Access - Ch. 3</td>
<td>Lesson 4.1</td>
<td>Lesson 4.2</td>
<td>AA8</td>
</tr>
<tr>
<td>APR 13-18</td>
<td>12    Access - Ch. 4</td>
<td>Lesson 4.3</td>
<td>Lesson 4.4</td>
<td>AA9</td>
</tr>
<tr>
<td>APR 20-25</td>
<td>13    Excel - Ch. 5</td>
<td>Unit Project 4</td>
<td>Lesson 5.1</td>
<td>Lesson 5.2</td>
</tr>
<tr>
<td>APR 27-MAY 2</td>
<td>14   Excel - Ch. 6</td>
<td>AA10</td>
<td>Lesson 5.3</td>
<td>Lesson 5.4</td>
</tr>
<tr>
<td>MAY 4-9</td>
<td>15    Unit Project 5</td>
<td></td>
<td></td>
<td>Review Final Exam</td>
</tr>
<tr>
<td>MAY 11-15</td>
<td>16   Final Exam Week</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Assignment Due Dates - Spring Term 2015

(December 27, 2015 – subject to revision)

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 26-31</td>
<td>Introduction</td>
<td>Introduction/Lesson 1.1/Lesson 1.2</td>
</tr>
<tr>
<td>FEB 2-7</td>
<td>Excel Ch. 1</td>
<td>Lesson 1.3/Lesson 1.4</td>
</tr>
<tr>
<td>FEB 9-14</td>
<td>Excel Ch. 2</td>
<td>Lesson 1.5/Lesson 1.6</td>
</tr>
<tr>
<td>FEB 16-21</td>
<td>Excel Ch. 3</td>
<td>Unit Project 1(Due Feb 23)</td>
</tr>
<tr>
<td>MAR 2-7</td>
<td>Excel Ch. 4</td>
<td>Lesson 2.3/Lesson 2.4/AA5</td>
</tr>
<tr>
<td>MAR 9-14</td>
<td>Access Ch. 1</td>
<td>Unit Project 2/Lesson 3.1/Lesson 3.2</td>
</tr>
<tr>
<td>MAR 16-21</td>
<td>Access Ch. 2</td>
<td>AA6/Lesson 3.3/Lesson 3.4</td>
</tr>
<tr>
<td>MAR 23-28</td>
<td>Access Ch. 3</td>
<td>Unit Project 3</td>
</tr>
<tr>
<td>MAR 30-APR 3</td>
<td>SPRING BREAK</td>
<td></td>
</tr>
<tr>
<td>APR 6-11</td>
<td>Access Ch. 3</td>
<td>Lesson 4.1/Lesson 4.2/AA8</td>
</tr>
<tr>
<td>APR 13-18</td>
<td>Access Ch. 4</td>
<td>Lesson 4.3/Lesson 4.4/AA9</td>
</tr>
<tr>
<td>APR 20-25</td>
<td>Excel Ch. 5</td>
<td>Unit Project 4/Lesson 5.1/Lesson 5.2</td>
</tr>
<tr>
<td>APR 27-MAY 2</td>
<td>Excel Ch. 6</td>
<td>AA10/Lesson 5.3/Lesson 5.4</td>
</tr>
<tr>
<td>MAY 4-9</td>
<td>Unit Project 5/Review Final Test</td>
<td>Sat., MAY 9 @ 6:00 PM</td>
</tr>
<tr>
<td>MAY 11-15</td>
<td>Final Week Exams/Review Final Test</td>
<td></td>
</tr>
</tbody>
</table>