CSCI 172 Introduction to Computer Modeling
Credits: 3
Prerequisites: M 90 Introductory Algebra
Syllabus Last Revised: August 2012

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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 2010 version of MS Excel and MS Access are needed to complete activities for this course (available on computers in student classrooms and labs).

The course uses a textbook authored by Robert 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. It utilizes Microsoft ActiveX technology and requires Internet Explorer and a Microsoft-based Operating System. Those students using a non-Microsoft computing platform are welcome to utilize the labs and classrooms available on campus.

MyITLab is bundled with the textbook. There are lots of versions of this particular textbook. Be sure to purchase the UM custom 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.
Required Materials

**Note:** Custom Textbook Bundle with MyITLab Simulation Software subscription – PLEASE BUY FROM THE UM BOOKSTORE!

A computer with the Microsoft Excel 2010 and Access 2010 will be required to complete all Mid-Level Exercises. The MS Office software suite is available to students at a substantial discount through the UM Bookstore. Campus computer labs are available to local students. General System requirement specifications for MyITLab are available at [http://myitlab.com/System_Requirements](http://myitlab.com/System_Requirements).

**Important Note for Apple/Mac Users:** A computer with the Microsoft Windows O.S. and Internet Explorer will be required to complete the required Unit Assessments found in MyITLab. Installation instructions for MyITLab Mac users is found at [http://wps.prenhall.com/bp_myitlab2010_macuser/](http://wps.prenhall.com/bp_myitlab2010_macuser/)

**Recommended Materials**
USB Electronic Storage Drive (Thumb-drive) to transport and backup files.

**Assessment**
Grades will be weighted and graded as follows:

<table>
<thead>
<tr>
<th>Assessment Area Weighting:</th>
<th>Grading Scale:</th>
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</thead>
<tbody>
<tr>
<td>Skill Building Exercises</td>
<td>90-100%</td>
</tr>
<tr>
<td>Chapter Assessments</td>
<td>80-89%</td>
</tr>
<tr>
<td>Unit Projects</td>
<td>70-79%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>60-69%</td>
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**Skill-Building Exercises** are found in MyITLab and consist of a simulated Microsoft Office environment. These exercises allow a student to practice the concepts covered in a lesson. They mirror the *Hands-On Exercises* found in the textbook.

**Chapter Assessments** are found in MyITLab and are labeled as *Grader Project Assessment*. These assessments have the student download an Excel/Access file, complete a list of prescribed activities, and upon completion upload the file back to the MyITLab system. The student is given immediate feedback on the assessments. A student has the option of correcting these mistakes and resubmitting the file to improve her grade.

**Unit Projects** are taken from the *Mid-Level Exercises* found in the textbook. Starter files for these projects are found on the CD in the back of the text and will also be posted in the Moodle LMS. Upon completion, these files are submitted to Moodle and graded by the instructor.

The **Final Exam** is a comprehensive multiple-choice assessment given at the end of the semester. It will cover vocabulary and concepts. Further information on the final exam will be available later in the semester.

**Academic Conduct**
Academic honesty is expected of all students. 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 Chapter Assessments (Grader Project Activities) and the Final Exam is strictly forbidden.*
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.

Accommodations for Students with Disabilities
Students with disabilities will receive reasonable accommodations in this online course. To request course modifications, please contact the instructor as soon as possible. You may be required to show proof of eligibility from UM Disability Services. For more information, visit the Disability Services website at http://www.umt.edu/dss/ or call 406.243.2243

Notes for Online Students
This course is structured to provide greater accessibility for students through its online delivery and “on-demand” format. The curriculum for the course has been broken down into learning units containing individual lessons. Each lesson should take around 2 hours complete. Plan to have three “virtual classroom” lessons each week. A lesson will consist of readings from the textbook and other online resource; online screen cast tutorials; and skill-building exercise simulations to assess your understanding of the material. Expect to complete somewhere in the neighborhood of 25-30 lessons in this course. The final exam will be comprehensive.

We will utilize two Learning Management System (LMS) software packages for the course: Moodle (UMOnline) and MyITLab (Pearson-textbook publisher). The official LMS for the course content, grades, schedules, lessons, etc. is Moodle. The MyITLab LMS software platform is used for skill building exercises, selected unit assessments, and exam(s).

All exercises and activities have a due date. You are expected to have submitted your assignment on-time. Once a unit has been completed, late submission of assignments or projects will not be accepted.

Office hours in the summer are by appointment only. I am at the college on a regular basis throughout the summer. If you are in the area, you are welcome to stop by and see me. If you are outside the Missoula area, feel free to call. In either case, please let me know you would like to meet and we’ll set up an appointment.

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:
1. READ THE BOOK. We have a great textbook which clearly explains topics involving spreadsheets and databases.

2. MOODLE LMS - COMPLETE ALL THE MATERIALS IN THE LESSON. As the lead instructor for the course, I have spent a great deal of time writing classroom notes, selecting video screen casts for tutorials, and creating video lectures and tutorials. Additionally other instructors teaching the course have contributed their own material. Lastly, the Web has an enormous amount of literature and multimedia resources on the use of Excel and Access. This means read the classroom notes and watch the video tutorials, lectures and demonstrations found in Moodle.

3. MYITLAB - COMPLETE THE ASSIGNED SKILL BUILDING EXERCISES. At the end of each lesson, you’ll be asked to complete a series of one or more skill-building exercises. These are the same ones found in your textbook, but have you have the automated advantage to complete using a simulation software package. If you’re able to complete these items, the independent projects will be fairly straightforward.

4. CHOP WOOD. This is a computer class. What does this mean? Well, chop wood is simply a metaphor for doing the work. Each week you will have a list due dates for assignments and a suggested schedule. Follow the schedule. Don’t put it off to the weekend. Chop the wood and get your work done as prescribed and you’ll have a great experience!

Good luck this semester and I hope you enjoy the course!
Proposed Topic Outline (subject to change)

Unit 1  Data Tables, Spreadsheet Basics, Formulas, & Functions (Introduction, Excel Ch. 1 & Ch. 2)
  1.1 Introduction – Office & File Fundamentals
  1.2 Introduction - Data Table using a Word Processor
  1.3 Introduction - Spreadsheets, Mathematics, and Formulas
  1.4 Workbook & Worksheet Management, Formatting, Page Setup, and Printing
  1.5 Formulas and Functions
  1.6 Logic Functions, Lookup Functions, Financial Functions, and Range Names

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

Unit 3  Datasets, Tables, and Data Analysis (Excel Ch. 5 & Ch. 6)
  3.1 Outlines and Subtotals
  3.2 PivotTables and PivotTable Options
  3.3 PivotTable Design and PivotCharts
  3.4 Analyzing Qualitative Data Sets
  3.5 Analyzing Quantitative Data Sets
  3.6 One- and Two-Variable Data Tables

Unit 4  Databases, Filters, Sorts, Queries and Relationships (Access Ch. 1 & 2)
  4.1 Introduction to Databases
  4.2 Filters and Sorts
  4.3 Relationships
  4.4 Multiple Table Databases
  4.5 Single Table Queries
  4.6 Multiple Table Queries

Unit 5  Calculations, Expressions, Forms and Reports (Access Ch. 3 & 4)
  5.1 Calculations and Functions
  5.2 Expression Building
  5.3 Aggregate Functions
  5.4 Forms
  5.5 Reports

Comprehensive Final Exam