CRT 172.01: Introduction to Computer Modeling

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COURSE NUMBER AND TITLE: CRT 172, Introduction to Computer Modeling

DATE REVISED: Fall 2006

SEMESTER CREDITS: 3

CONTACT HOURS PER SEMESTER: 3

PREREQUISITES: Word Processing, Spreadsheet, and Database experience or courses.

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OFFICE LOCATION: Across from AD 12
OFFICE HOURS: As posted on office door or by appointment

COURSE DESCRIPTION: This course uses spreadsheet, database, word processing, and graphics software to solve advanced business applications. Procedures will emphasize efficient use of commands and utilities available with integrated packages, as well as importing files from database, word processing, graphics, or spreadsheet software. Students will use popular web authoring tools to design web pages and presentation software to design a multimedia presentation.

STUDENT PERFORMANCE OUTCOMES:

Upon completion of this course, the student will be able to:

- Complete real-world applications relating to the Microsoft Office suite of products.
- Integrate multiple software products while completing projects.
- Demonstrate critical-thinking skills while deciding between alternative approaches.
- Develop independent work habits while also utilizing the team approach to problem solving.
- Select Internet and Web search engine tools for locating information for selected projects.
- Adapt creative approaches to problem-solving activities.
- Utilize multimedia and graphics to enhance document design, layout, functionality, and appearance.
- Analyze real-world business problems and then apply appropriate media, strategy solutions, and modeling.
- Determine a total problem solution based on an analysis of the components.
- Integrate and reinforce skills and knowledge acquired in previous courses.
STUDENT PERFORMANCE ASSESSMENT METHODS AND GRADING PROCEDURES:

The total points possible for each graded activity and deadlines will be announced in advance. The final grade will be determined by dividing total points earned by total points possible. Because there are no tests, meeting deadlines with quality work is an important aspect of this course and work in this field.

GRADING SCALE:  
93 – 100 = A  
87 – 92 = B  
80 – 86 = C  
75 - 79 = D

ATTENDANCE POLICY: Students are expected to attend and participate in class. Because of the amount of material covered in this class, it is important that students consistently attend class. Students are expected to use good work habits and time management to meet deadlines. THERE IS NO OPPORTUNITY FOR MAKEUPS.

ACADEMIC Integrity: 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://www.umt.edu/SA/VPSA/index.cfm/page/1321.

COURSE OUTLINE:

I. Introduction  
   A. Course requirements/activities/expectations  
   B. References, supplies  
   C. Software packages  
   D. File management/disks

II. Word Processing  
   A. Creating folders and word documents  
   B. Advanced features  
      1. Letter merges with various source models  
      2. Tables  
      3. Sorting records  
   C. Integrating Word with other programs  
      1. Embedding and linking  
      2. Embedding Excel worksheet  
      3. Embedding Excel charts  
      4. Creating and navigating hyperlinks

III. Spreadsheet modeling  
   A. Purpose and use of the spreadsheet  
      1. Creating, editing, formatting spreadsheets  
      2. Using functions, creating formulas, performing calculations  
      3. Absolute and relative cell references
4. Creating and enhancing charts/tables
B. Planning and creating lists
C. Freezing rows & columns
D. Using Find & Replace
E. Sorting data
F. Filtering using autofilter
G. Creating a pivot table
H. Creating macro buttons
I. Integrating Excel
   1. Pasting
   2. Object linking and embedding
   3. Inserting WordArt
   4. Linking an Excel worksheet to a Word document
   5. Creating hyperlinks to connect files
   6. Working with multiple worksheets & workbooks
   7. Preparing worksheets for web publication
   8. Exporting spreadsheet data to database

IV. Database modeling
A. Purpose and use of databases
B. Database design, information input, editing, retrieval
C. Relational databases
D. Extracting information
   1. Wizards
   2. Queries
   3. Reports
   4. Filter by form
   5. Filter by selection
D. Creating custom forms
E. Integrating Access with other programs
   1. Embedding a chart in a report
   2. Linking a Word document in a report
   3. Exporting an Access query as an Excel worksheet
   4. Merging a word document with a database
   5. Import Excel workbooks
   6. Create new fields in queries by formula

F. Web integration
   1. Data access pages
   2. Convert data to HTML format

V. Multi-media presentations
A. Creating a presentation
   1. Using slide transitions and animations
   2. Adding a scanned image
   3. Adding an image using digital camera
   4. Adding animated GIF and sound clips
   5. Automating presentations