Course Description
A study of the computing fundamentals needed for the understanding and use of information technology, which is essential to information professionals. Focus is on examining computer systems in concept and practice. Topics include how computers represent, process, store and retrieve information; how operating systems control these processes, interpret commands, present the user interface, and run applications; how databases are designed and created; how general understanding of programming processes and productivity software skills is important in a variety of professional contexts. Productivity applications include the Office suite, Internet applications and web publishing, and database management systems.

Course Objectives
To introduce the student to basic computer and IT concepts including hardware, software, operating systems, Internet protocols and HTML, database design and implementation, and IT security issues.

At the end of this course, students will:
- Have developed a conceptual and practical understanding of the computing fundamentals essential to information technology systems, including how computers represent, process, store and retrieve information, present the user interface, run useful applications, and interact in a networked world.
- Understand the function and role of operating systems in the management of computer processes and data, and how to effectively utilize them in both graphical and command-based environments.
- Have developed a knowledge base regarding computer hardware and software sufficient to make informed selection decisions and perform routine troubleshooting.
- Be familiar with general programming processes and developed basic script programming skills.
- Be familiar with database systems, systems analysis and modeling techniques (ERD and DFD), and normalization.
- Understand markup language concepts and graphics techniques to create HTML web pages and successfully upload them to a Unix based web server.
- Have developed competencies in some widely used productivity applications including Microsoft Word, Excel, PowerPoint, and Access as well as cloud computing.
- Be familiar with cloud computing applications.

Textbook
The text is Computer Concepts 2012: Comprehensive by Julia Parsons and Dan Oja (ISBN 13: 978-1-111-52907-9). NOTE: this is a new text, but the previous edition Computer Concepts 2011: Comprehensive by Julia Parsons and Dan Oja (ISBN 13: 978-0-538-74481-2) will also be acceptable; the pagination appears to be the same, but I assume there might be some minor additions or changes to the new edition.
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Additional Web Resources and requirements
Students will utilize various other materials are on the web as directed in each module; I have a Youtube channel at http://www.youtube.com/jbmillerSLIS with videos of interest. The publisher of our text also has a great web site you can register for at http://login.cengage.com/cb/ where you can take practice quizzes and access other resources. There is also a University of Kentucky's web based training page at http://www.uky.edu/HR/etraining/. You will also need to establish a Google account that you might need for some course activities.

Blackboard and SWEB
We will use the Blackboard course management system to facilitate some course activities and provide handout materials. Please visit http://www.uky.edu/Blackboard/ to learn about this system. We will also use the SWEB system for many project activities; you should go to http://sweb.uky.edu to make sure your access is working correctly; you can test this by seeing if you can login using the web file manager tool on sweb. Issues about sweb should be directed to help@sweb.uky.edu or by phone to 218-HELP.

Grading
The grade for this course will be based on the following:
2 exams, 100 pts each 200 pts (59%)
5 projects 140 pts (41%)
Total: 340 pts.

Grading Scale:
100-90% (306-340 pts) = A
89 -80% (272-305 pts) = B
79 -70% (238-271 pts) = C

Projects
Project #1: An introduction to the functions and use of operating systems. We will examine HCI using command line operating systems (Windows DOS shell, Unix) and graphical systems (Windows). Tasks include navigating directory structures and file management. 20 pts. DUE February 13
Project #2: Create your web page using HTML and upload to the sweb server. This basic page will be updated periodically by adding links to completed future projects. 25 pts. DUE March 5
Project #3: Productivity applications and cloud computing: (45 points) DUE March 26
  Part 1: Word processing - Create a newsletter from a given text file
  Part 2: Excel - An Excel exercise in which a library budget will be prepared
  Part 3: PowerPoint – a short PowerPoint slide show will be created
Project #4: An introduction to programming processes via text based command scripts. Batch files, simple JavaScript, and PHP scripts. 25 pts DUE April 9
Project #5 (25 points): Relational databases in Microsoft Access. DUE April 23

Course schedule:
Week 1 January 23 Module 1: Course Introduction.
  Computing history
  Binary numbers and Boolean logic
Text Readings: Chapter 9, Section A, pages 486-96) and Chapter 1, pages 2-28 (Emphasis on section C)
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Week 2 January 30 Module 1 continued

Week 3 February 6 Module 2: Operating Systems
- Functions of PC operating systems
- HCI via the command line, command syntax, and GUI
- Disk organization and directories; File names and extensions
- Introduction to Unix and Windows
- Secondary storage concepts and file systems

Text Readings – Chapter 4
Online:
http://www.easydos.com/dosindex.html commands
http://www.computerhope.com/msdos.htm
http://www.engr.uky.edu/unixhelp/index.html on Unix

Week 4 February 13 Module 2 continued Project 1 due
Begin Module 3 Internet and the Web
- A brief history of the Internet
- Internet protocols

Text Chapter 6

Week 5 February 20
Module 3 continued
- Markup languages and HTML
- Unix and uploading files
- Web 2.0

Text Readings: Chapter 7
Other HTML Readings:
http://www.w3schools.com W3schools site:
http://www.w3.org/TR/REC-html40-971218/intro/intro.html

Week 6 February 27 Module 4: computer hardware
Computer hardware systems: CPU cycles, RAM addressing, ROM, data bus.
- Input/output devices
- Graphics and displays
- Mass storage
- Mobile devices

Text Readings: Chapter 1, section D and Chapter 2

Week 7 March 5 Begin Module 5: Productivity software, Project 2 due
- Word, Excel
- Exam review
- Excel, and Powerpoint

Text Readings: Chapter 3

Week 8 Spring break March 12

Week 9 (March 19) MIDTERM EXAM at start of session
Module 5 continued
- PowerPoint
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Cloud options
Online: Google docs help

**Week 10 March 26 Module 6: Programming and scripting, Project 3 due**
Programming processes, software types and trends; compiled, interpreted, object oriented languages

**Week 11 April 2 Module 6 Continued: Scripting**
Introduction to text based script command files: batch files, replaceable parameters, flow of control. PHP and JavaScript examples
Text Readings: Chapter 12 sections A, B, C (pages 672-712)
Online readings:
http://www.computerhope.com/batch.htm (section on batch files)
http://www.robvanderwoude.com/ (section on batch files)
http://www.w3schools.com/js/js_intro.asp (introduction to JavaScript)

**Week 12 April 9 Module 7 Database systems, Project 4 due**
Introduction to Database Management Systems
Entity Relationship Modeling and Normalization
Query languages (SQL)
Access
Text Readings: Chapter 11
Online Readings:
*http://www.smartdraw.com/resources/centers/software/erd.htm* ER models
http://www.umsl.edu/~sauter/analysis/er/er_intro.html
*http://www.agilemodeling.com/artifacts/dataFlowDiagram.htm* Dataflow diagrams
*http://www.oreilly.com/catalog/accessdata2/chapter/ch04.html* Normalization
Extra and supplemental:
http://databases.about.com/library/weekly/aa080501a.htm
http://www.sqlmag.com/Articles/Index.cfm?ArticleID=4887&pg=1
http://www.databasejournal.com/sql/etc/article.php/26861_1428511_4

**Week 13 April 16**
Module 7: Database Systems continued

**Week 14 April 23 Module 8: PC Security, Project 5 due**
Viruses and malware
Internet security
Textbook:
Chapter 1 section E (pages 34-42)
Chapter 3 section E (pages 162-169)
Chapter 6 section E (pages 340-349)
Chapter 7 section E (pages 400-408)
Chapter 12 section E (pages 723-729)

**Syllabus Part 2: Policies, systems used, and frequently asked questions.**

**Apple users**
This is a Windows-centered course, but you should be able to do most all activities with your Apple computer. However, there are a few course elements that require the Windows operating
system. Apple computers can be setup to run Windows sessions either with the “boot camp” utility or by using VMware or you can simply elect to locate and use a Windows PC for those few parts of the course. Alternatively, I have made a Windows computer available that you can connect to and use remotely from any Internet connected computer when needed – please email me if you want access to this system so I can setup a login for you. There is a tutorial about how to connect to it from your Apple computer available in Blackboard.

Adobe Connect
Adobe Connect, a web conferencing tool. You can access a virtual meeting room via an URL that I will provide if you wish to have such a virtual session with me. There is an introductory video on this tool in BlackBoard.

Late Assignments:
Assignments are due at the end of the class period on the due date; late assignments will have 10% deducted if they are late up to one week from the due date. Assignments more than a week late will not be accepted without a documented appropriate excuse. The instructor reserves the right to modify due dates (i.e. extend) if needed.

Attendance Policy
Students are expected to attend class. Although there is no participation component in the grading scale, unexcused absences that total up to one fifth of the contact hours for the course will result in a letter grade reduction. If unexcused absences exceed one third of the contact hours, an automatic grade of E will be assigned. Students are responsible for all material covered during any absence.

Exam Policy
It is the responsibility of every student to be present for exams. If a student misses an exam as a result of a documented illness or emergency, an opportunity to make up the test by appointment will be arranged.

Plagiarism and Cheating
Plagiarism and cheating will not be tolerated. The University of Kentucky has established rules concerning these issues. You can review the University guidelines and consequences at http://www.uky.edu/Ombud/acadoffenses/index.htm. Please note the penalties described for these violations.

Diversity in LIS
All UK professional education programs address and affirm the value of diversity in education, the use of technology to support all aspects of instructional programming, and the importance of attaining high levels of skill in assessing the outcomes of instruction. This course will provide students an opportunity to demonstrate attention to these themes and reflect on the mechanisms that this course has provided to demonstrate improved skills in these areas.