

Huntingdon College

Adult Degree Completion Program

COURSE NUMBER: COMP105
COURSE NAME: Computers & Society
Spring 2009, Session I, Montgomery

INSTRUCTOR'S NAME: Michael Foster

CONTACT INFORMATION: michael.foster@huntingdon.edu

COURSE DESCRIPTION: A survey of computers and their impact on society. Includes the history of computing, philosophical and ethical issues of computer applications, basic terminology and technological concepts, and an introduction to common computer applications, computer programming, and web page construction.

PREREQUISITE: none

TEXT REQUIRED: Lawrence Snyder; Fluency with Information Technology: Skills, Concepts, & Capabilities; Pearson Education, Inc (**see Huntingdon College booklist for edition and ISBN**)

COURSE LEARNING OUTCOMES:

- Understand the basic terms relating to technology.
- Understand the basic principle of IT: Form follows Function
- Understand common methods of searching and editing text.
- Understand network basics like TCP/IP, DNS, LAN, and the basics of the WWW.
- Be able to use basic HTML tags, create a web page, and display it on the server
- Understand how search engines work and how to search effectively
- Understand the process and steps of debugging
- Understand how information is presented using symbols, binary concepts like PandA, binary numbers, and ASCII
- Understand principles of computer operation (integrated circuits, the fetch/execute cycle, the purpose of an operating system, how a semi-conductor works and the effect of miniaturization and integrated circuits have had on computers and society)
- Understand the five essential principles of algorithms
- Understand basic use of spreadsheets and how they function
- Understand binary numbers and how they represent data
- Understand the concepts behind audio and video compression
- Understand the basics of programming, logical flow and syntax
- Understand proper netiquette.
- Understand how to avoid viruses, phishing, and email scams.
- Understand intellectual property rights, software licensing and copyrights on the internet.
- Understand the function of a database and why spreadsheets should not be used as databases.

COURSE ASSIGNMENTS & GRADING CRITERIA:

Grading Elements	Percentage:
Web Page	10 points
Additions to web page	10 points
Algorithm	10 points
Power Point Presentation	10 points
Graphics	6 points
Spreadsheet #1	6 points
Spreadsheet #2	6 points
Spreadsheet #3	8 points
Word Processing	5 points
Programming	6 points
Articles/Class Discussion	8 points
Quiz #1	15 points
Quiz #2	15 points
Quiz #3	15 points
Quiz #4	15 points
Quiz #5	15 points
Total	160 points

There are a total of 160 points. Your grade is a percentage of the total number of points you earn on each assignment or quiz.

GRADE POINT EQUIVALENTS

- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = 59-below

ATTENDANCE POLICY:

Absences and Tardiness – All students are required to attend the first session. Those who do not attend the first session will be automatically dropped from the course. Students with more than one absence will receive an "F" for the course. Since this class meets only five times, missing a single class meeting is equivalent to missing three weeks of a regular term. If you cannot attend a class you must let the instructor know via email as soon as possible. In case of absences you are responsible for obtaining all handouts and assignments. Tardiness may result in a deduction in your class participation grade. Excessive tardiness may count as an absence.

Participation –Participation is not the same as attendance. Participation requires students to come to class prepared to actively participate, which makes the classroom experience more meaningful. However, participation is not just speaking out in class. The contributions made by the student should be related to the course content and meaningful to the class discussion.

Late Assignments – Explain whether late assignments will be accepted and what penalty might be imposed if the assignment is late. Also specify what assignments can be turned in late. This will allow the student to make informed decisions.

Accommodation of Special Needs- Huntingdon College makes every reasonable accommodation for disabilities that have been processed and approved through our Disability Services Committee in accord with the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. In order to request disability-related services at Huntingdon College, students must self-identify to the Disabilities Intake Coordinator, Camilla Irvin, and provide appropriate and up-to-date documentation to verify their disability or special needs. After the accommodations have been approved by the Disability Services Committee, the 504 Coordinator, Dr. Lisa Olenik Dorman, will notify your professor(s) of the committee's decision. If you have any questions regarding reasonable accommodation or need to request disability-related services, please contact Disability Services at (334) 833-4432 or e-mail at disabilityservices@huntingdon.edu.

Academic Honesty –Plagiarism is literary theft. Failure to cite the author of any language or of any ideas *which are not your own creation* is plagiarism. This includes any text you might paraphrase, as well. Anyone is capable of searching the Internet or any printed media; your research paper is intended to broaden your knowledge, stimulate your creativity, and make you think, analyze, and learn. It is not consistent with the College Honor Code, nor with scholarly expectations to submit work which is not the product of your own thinking and research. Severe penalties will result upon the submission of any work found to be plagiarized, including potential failure of the entire course. It is easy and simple to properly cite all sources used in your paper. Take no risks – cite your sources.

CLASS SCHEDULE:

Week 1: Defining Information Technology, Exploring the Human/Computer Interface, The Basics of Networking and A Hypertext Markup Language (HTML) Primer

Assignments for Session 1 (complete *prior* to class session 1):

- READ Chapters 1, 2, 3 and 4 in the text.
- Purchase a USB Thumb drive to store and transfer files and bring it with you to the first class session. USB drives can be purchased for less than \$15.00 at an office supply or discount store.
- Bring an article to class which describes an issue or concern about the web, the use of technology, or how networking has changed society. Be prepared to discuss your article during class.

Objective: To trace the development of the computer interface; to look at the basics of networking, the internet and the World Wide Web, and to create a basic web page.

QUIZ: Short-answer test on chapters 1, 2, 3, and 4 at the end of class.

Consider these questions as part of the Session 1 learning experience:

- Explain why it's important to know the right word in information technology?
- Describe what happens when a mouse button is clicked.
- What is the GUI and how does it work?
- What changes have networked computers brought to society?
- How does the format of the mark-up language differ from the document's format?

Week 2: Continuing HTML, Searching, Debugging and Algorithms

Homework: Assignments for Session 2 (complete *prior* to class session 2):

- Read Chapters 5, 7, 8, 9, and 10 in the text.
- Create a web page (This is to be coded by hand)
 1. Create a web page called index.htm. (For students who have never done any web pages before, it is suggested that you first create this web page and only enter two words: Hello World!!.
 2. Begin with your name in bold red <H1> at the top of the page
 3. Build a three-column table. List hourly times from 8:00 to 3:00 in one column. In the next column list your schedule for Mondays (in hourly blocks). Include lunch, of course. Make Lunch with a blue background. In the third column add comments about the appointments.
 4. Below the table, write a paragraph explaining your favorite web site (must be G-rated) and provide a link to it.
 5. Copy a picture from the Huntingdon website, put it in your web server folder and have it display directly under your name at the top of your page. (Alternative - if you have any other picture, that may be used as long as it is not stolen from a non-Huntingdon website and there are no copyright issues involved. You may use a picture of you, your family, your dog or any other photo.)
 6. Save your work on your computer and also on your USB drive.

Objective: To examine the principles behind internet searches and how they work; to look at the concept of debugging and a strategy for doing so; to examine how information is represented digitally; to examine basic principles of computer operation, and to examine the properties of algorithms and algorithmic thinking

QUIZ: Short-answer test on Chapters 5, 7, 8, 9 and 10 at end of class.

Consider these questions as part of the Session 2 learning experience:

- Why are formal languages superior to natural languages for programming?
- Without miniaturization and integrated circuits, what things wouldn't we have that we now have? How has this changed society?
- If a computer is essentially PandA or on/off, how can it do complex tasks?
- What steps would you take to find out if information on a web site is correct, or if the web site is legitimate?

Week 3: Representing multimedia digitally and using Spreadsheets

Assignments for Session 3 (complete *prior* to class session 3):

- Read Chapters 11, and 13 in the text.
- Make the following additions to your web page:
 1. Create a table at the bottom of your web page using the caption tag. For now, use only one <td> tag in each row. As a suggestion, the caption could be "My Links" or something like that -- this is going to be your links table.
 2. Make a new page that consists of an ordered list of courses you are planning to take in the in the future (this can be a fictitious list but in any case should have at least four courses). Put this list on a separate page, and have a link to this page in your new links table. As a suggestion, call this new page "courses.htm" and save it to your server directory, and link it to your index.htm page in the first line of this new links table.
 3. Make another new page with an ordered list of career goals (can again be fictitious but must have 4 or 5 career goals) -- you might want to call this "goals.htm" and link this page in the 2nd line of your new table

4. Make yet one more page with an ordered list of at least 3 of your favorite places to eat (could also be fictitious) and using a nested list, list what items on the menu are the best. You might name this "food.htm" and then put a link in the 3rd line of your new table.
 5. Use the title tag on your index.htm page (suggested that you use it on all your pages). Call your page anything you wish.
 6. Have the new index.htm page any background color except white (optionally, you may, of course, use a background color on your food, goals and courses page also)
 7. Save your work on your computer and also on your USB drive.
- Draw a flow chart describing how you would get someone from the door of the classroom (standing IN the doorway) to your car in the parking lot.. (Note: define EVERYTHING – if you use steps (as in foot steps), define their length (it should be yours), if you say “turn” define what you mean, how much of a turn, etc.). Allow for these alternatives
 1. There might be lots of people standing outside the door and you can't go directly ahead
 2. It might be raining or dark outside
 3. The door through which you normally enter the building might be blocked. Make an alternative plan to use a different door.
 4. Add any other alternatives you can think of to consider safety issues
 5. Final objective is to be sitting in your car with your hands on the steering wheel.

While you must work alone on this, you may have someone who is NOT in the class try to follow your algorithm to see if it works. This is a 10 point assignment.

Things to keep in mind:

1. Specify materials needed (umbrella, axe, lockpicks, whatever...)
 2. NUMBER each box/step
 3. Make sure you define variables
 - Define your step in inches
 - Define what you mean by turn, etc.
 - Consider that someone with no knowledge could follow your directions literally
 4. Specify input and output (input is all that you need, output is the final objective)
 5. Define places and be specific (Don't say "Now at the front door", say "Now at the front door of Flowers"; don't say "Open the door to Pratt" -- say which door to Pratt you are opening, etc.)
- Create a PowerPoint Presentation:
 1. It must have at least 10 slides and use any Design Template
 2. It must have a title slide with one line of text. Make that line or another line a hyperlink to Huntingdon main page. Make the text say "To Huntingdon College"
 3. It must have a 2nd slide with a title line and at least 3 bulleted items. Make one line a hyperlink to your web page. Make the text say "Click here"
 4. The 3rd slide must have a title slide, at least 2 bulleted items with sub items. Make both sub items bold, italic, and underlined.

5. The 4th slide should have nothing but a picture from file. Size the picture by dragging a corner until at least one of the dimensions fills the slide
6. The 5th slide can be any layout, but should play music for 10 seconds when the slide loads. Also have a different color scheme from slide 4 (but keep the same design template)
7. The 6th slide should have nothing but a clip art image
slides 6 to 10 slide should have a different slide design for that slide only (one design for slides 1-5 and 5 different ones for slides 6-10)
8. The finished product needs to be in TWO formats:
 - A CD to be handed in at class time. Use the "Package to CD" command so that the CD will start your presentation as soon as the CD loads, regardless of whether the user has PowerPoint or not
 - A web page, with a link on your link table
 - Don't use the Single File web page... change to Web Page htm or html
 - As usual, it is best NOT to use spaces or upper case file names
 - This will create TWO items you need to move to your web site. One will be the .htm file, the other a folder with the same name. For example, if you save the file as powerpointdemo.htm there will also be a power point demo files folder to move. BOTH are necessary for your presentation to work.
6. Content for all slides can be all pseudo-text, or it can be a subject or whatever you want.

Objective: To explore binary numbers as related to RGB colors and look at binary arithmetic; to see how sounds, images and video can be digitally represented; to be able to work with spreadsheets.

QUIZ: Short-answer test on Chapters 11, and 13 at end of class.

Consider these questions as part of the Session 3 learning experience:

- What is the difference between analog and digital information?
- What is meant by the Bias-free Universal Medium principle?

Week 4: Programming

Assignments for Session Four (complete *prior* to class session 4):

- READ Chapters 18, 19, 20, and 21 in the text.

Graphics and editing graphics - this assignment has two parts.

1. Using the current graphic/picture on your web site (or any other photo or graphic) use one of the effects available to alter your picture/graphic. Leave the original picture on your index page and add this new picture next to it (or below it. A good formatting suggestion would be to use a 2 cell table, with one picture in each cell)
2. Create a graphic of your name using drop shadow and any other effects you choose. Put this name graphic on a new web page, and create a link to the page on your link table

Spreadsheet #1 – Basic Invoice

Assume your company sells ice cream by the gallon. Construct a spreadsheet to use as an invoice that includes, at a minimum, 5 varieties of ice cream (chocolate, double chocolate, triple chocolate, quadruple chocolate, chocolate chip, etc. – whatever flavors you like) List these in a column, and in related columns, cells for price per gallon, number of gallons purchased, and extended total. In a summary section, compute the total gallons of the shipment and the total cost of the ice cream. Add a \$.50 per gallon shipping, and \$5.00 fee for dry ice for each 5 gallons shipped (round up -- 6 gallons would cost \$10), and calculate the invoice total.

It should be possible to open your spreadsheet, enter values for the number of gallons purchased for any or all ice cream varieties, and the spreadsheet should calculate the extended totals for each flavor so that each row would have column for number of gallons to be purchased, the flavor of that gallon, the cost of that gallon and the extended total cost for the flavor. At the bottom should be the total ice cream cost, cost of dry ice, and cost of shipping. It should then give an invoice total.

Make your spreadsheet look like an invoice: Your company name and address (make one up), cells for the purchaser's name and address, etc.

Name your spreadsheet "xxxxx.xls", where "xxxxx" is your first two initials and last name (for example, Peter Smith would name his spreadsheet psmith.xls) and **save it on your USB drive.**

Spreadsheet #2 - Borrowing Money

You need to borrow money to open your ice cream store.

- You can only make payments of 10 times your current class average, and your minimum loan amount is 1000 times your loan average
 - your current average is 83, you need to borrow at least \$83,000, but can only afford \$830 a month for 6, 12, 18 or 24 months
- Following the example on page 399 in the text, create a spreadsheet that shows:
 1. A column of loan amounts incremented by 1000 (have 12 values)
 2. A loan schedule for payback in 6, 12, 18, or 24 months
 3. Using conditional formatting, change to blue the cells where the monthly payment is less than or equal to your grade times 10
 4. Your interest rate can be anywhere from 4% - 7% but you must have some cells that meet the criteria of your budget (your average multiplied by 10)

Spreadsheet #3 - Charts

From your link chart created on your index.htm, add three links to separate pages. Each of these 3 pages is going to be a chart created from your ice cream spreadsheet.

For the customer show the items purchased, the number of gallons purchased, the price per item and the total spent on each item (it is not necessary to include any shipping or handling charges or for packing or ice).

1. The first chart **MUST** be a bar chart. It should have the following characteristics/formats:

- Colored chart area
- Colored plot area
- Horizontal bars
- Flavors on the left, quantity on the bottom
- Data table at the bottom
- Legend on the right
- Value label on the highest bar of each flavor
- Customer name at the top

2. The second chart **MUST** be a 3D column chart. It must have the following characteristics/formats:

- Colored chart area
- Colored plot area
- Different colors for each flavor
- Flavor labels off to the right and angled slightly downward
- Price, quantity, total at the bottom angled slightly upward
- Legend on the right
- Customer name at the top

3. The third chart is yours to experiment with and do any way you wish, even if it does not make any sense of the data, as long as it is distinctly different from charts 1 and 2.

Objective: To introduce the basic set of programming concepts and illustrate them.

QUIZ: Short-answer test on Chapters 18, 19, 20 and 21 at end of class.

Week 5: Internet Security and Privacy, Intellectual Property Rights, and Databases

Assignments for Session 5 (complete *prior* to class session five):

- READ Chapters 12, 14, 17, 23, and 24 in the text.
- Word Processing: You will be given a file, a "Dummy Text.txt" file. The assignment is to use your word processor and the dummy text file and create a document that follows the formatting instructions contained in the paragraphs of the text. All of the skills necessary to do this assignment are not covered in class. Completing this assignment demonstrates that the student can do most of the basic formatting required in word processing. Save this document on your USB drive and bring it to class with you.
- Find an article describing phishing or an article about viruses and malware and be prepared to discuss your article in class.
- Programming – Copy the code for the Bean Counter Program found in Appendix D (page 713-715) of your textbook and create a web page to include in your website. Make sure to add a link that opens the page containing the program. Save this on your

USB drive and bring it to class. You should be prepared to discuss the function of each line of code in the program.

Objective: To look at proper internet/email protocols (netiquette); to learn how to protect from viruses, scams, phishing and other internet dangers; to examine legal and ethical issues such as copyright, intellectual property rights and software licensing; to get an introduction to databases and their use and note how their function is different from spreadsheets.

QUIZ: Short-answer test on Chapters 12, 14, 17, 23, and 24 at end of class.

Consider these questions as part of the Session 5 learning experience:

- If one can not tell the difference between actual Mondrian art and a computer generated Mondrian-like art, is there a difference? Is the computer really generating art?
- How is the thinking of a human chess master different from Deep Blue?
- What will technology and computers be like in 20 years? In 50 years?

Miscellaneous matters:

USE the Web resources available through your text to intensify your learning experience. There are excellent tutorials to be found on programming and on web page development. Microsoft has excellent tutorials on all their office products.

Due to the nature of the class, certain topics will demand more class time than others. Thus is it imperative that you read the chapters prior to class so that you can ask questions on any information you don't understand. Given the short class times, it is impossible to cover all the information in the class sessions.