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CSCI 105.50C: Computer Fluency

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The University Of Montana - Missoula
Missoula College
Department of Applied Computing and Electronics
Course Syllabus

CSCI 105 Computer Fluency
Credits: 3
Term: Autumn 2013

Faculty Contact:

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Course Description:

Introduces the skills and concepts of information technology, both from practical and a more theoretical point of view. During lectures and interactive computer labs, students will explore a wide range of digital and information technologies, including common PC applications, networking, databases, privacy, and security

Course Overview:

The term "computer literacy" has a connotation involving skills and competency in the use of basic computing applications. Examples of literacy include the use of a word processor or a web browser. Fluency requires a deeper understanding and competency of concepts involving information technology. The term "fluency" was coined by a National Research Council Report led by University of Washington Professor and textbook author, Larry Snyder. Fluency with information technology requires three kinds of knowledge: contemporary skills, foundational concepts, and intellectual capabilities. Contemporary skills, the ability to use today's computer applications, enable people to apply information technology immediately. In the present labor market, skills are an essential component of job readiness. Most importantly, skills provide a store of practical experience on which to build new competence. Foundational concepts, the basic principles and ideas of computers, networks, and information, underpin the technology. Concepts explain the how and why of information technology and they give insight into its opportunities and limitations. Concepts are the raw material for understanding new information technology as it evolves. Intellectual capabilities, the ability to apply information technology in complex and sustained situations, encapsulate higher-level thinking in the context of information technology. Capabilities empower people to manipulate the medium to their advantage and to handle unintended and unexpected problems when they arise. The intellectual capabilities foster more abstract thinking about information and its manipulation.

Course Outcomes:

- Demonstrate proficiency in the use of information technology, file management, and the ability to learn new software.
- Understand the basic operation of a computer, a local network, and the Internet
- Demonstrate proficiency in online learning and research.
- Identify security precautions for protecting personal information.
- Demonstrate concepts involving programming, digitizing, and encoding information.
- Develop general strategies to logically diagnose, troubleshoot, and solve technical problems.

Required Materials:

Pearson Custom Computer Science for CSCI 105 (Computer Fluency); Snyder, Larry; *Fluency with Information Technology*; Fifth Edition; Pearson (available from UM Bookstore) ISBN 978-1-2690-8706-3

Evaluation Procedures:
Grades will be assessed as follows:

Assessment Area:		Grading Scale:	
Assignment Activities	50%	90-100%	A
Review Questions	25%	80-89%	B
Quizzes	25%	70-79%	C
		60-69%	D

Assignment Activities provide a practical application to reinforce the concept covered in a lesson or chapter. Examples of assignment activity include: write a piece of code, research a topic, create a spreadsheet, complete some calculations, work some problems, etc.

Review Questions are used to reinforce a reading or lecture. Following completion of a reading or lecture review questions will be assigned to assess retention of the material covered. Think of review questions as an attendance requirement for the online course – it reinforces assigned readings.

Quizzes will be given periodically at the end of each chapter or unit. Expect quizzes to consist of around 10-20 multiple choice questions.

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://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 exams is strictly forbidden.

Collaboration on Quizzes is strictly prohibited.

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

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.

Quiz, Review Question, and Assignment Policy:
All quizzes are to be completed on the assigned date and time. Assignments and review questions are due by the end of the stated day (midnight). Late assignments will be accepted without appropriate justification and only at the discretion of the instructor. Rescheduling of a quiz will be approved at the discretion of the instructor and only in extraordinary situations.

Learning Management System:
It is the responsibility of the student to access and familiarize herself/himself with the Learning Management System (LMS) for the course (Moodle). Access & training is available through UMOnline http://moodle.umt.edu

Changes to Syllabi:
Note: Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

CSCI 105 Topic Outline (tentative 34 Lessons):

Unit 1: Becoming Skilled at Computing (Ch. 1)
- Lesson 1 Introduction to the Class
- Lesson 2 Becoming Skilled at Computing - Concepts
- Lesson 3 Pixels & Scientific Units
- Lesson 4 Comparisons

Unit 2: The Human-Computer Interface (Ch. 2)
- Lesson 5 HCI - Concepts
- Lesson 6 Software: Comparisons
- Lesson 7 Software: Common Features

Unit 3: The Basics of Networking (Ch. 3)
- Lesson 8 Networking: Concepts
- Lesson 9 IP Addressing & DNS
- Lesson 10 FTP & HTTP

Unit 4: WWW & HTML (Ch. 4, Appendix Ch. 15)
- Lesson 11 HTML Primer - Concepts
- Lesson 12 The First Web Page
- Lesson 13 HTML Hyperlinks & Images

Unit 5: WWW, & HTML (Ch. 4 - 5)
- Lesson 14 HTML Tables & Lists
- Lesson 15 Debugging

Unit 6: Applications of the WWW (Ch. 6 – 7)
- Lesson 16 Locating Information on the Web
- Lesson 17 The Online Library and Research
- Lesson 18 Social Implications of IT

Unit 7: Modeling with Spreadsheets (Ch. 8)
- Lesson 19 Introduction to Spreadsheets using the Computing Cloud
- Lesson 20 Spreadsheets Functions for Planning

Unit 8: Modeling with Databases
- Lesson 21 User Input Forms
- Lesson 22 Single Table Queries with SQL

Unit 9: Encoding and Algorithms (Ch. 9 – 11)
- Lesson 23 Encoding Information
- Lesson 24 Algorithms

Unit 10: Programming with JavaScript (Ch. 11 - 12)
- Lesson 25 Flowcharting an Algorithm
- Lesson 26 JavaScript Concepts: Introduction to Programming

Unit 11: Programming with JavaScript (Ch. 12, Appendix Ch. 16)
- Lesson 27 JavaScript - Programming Paradigm: Input->Processing->Output
- Lesson 28 JavaScript - Conditional Statements

Unit 12: Programming with JavaScript (Ch. 13, Appendix Ch. 17)
- Lesson 29 JavaScript - Concepts: Events & Forms
- Lesson 30 JavaScript – Events and Forms: OnClick Event
- Lesson 31 JavaScript – Events and Forms: OnChange Event

Unit 13: Programming with JavaScript (Ch. 14, Appendix Ch. 18)
- Lesson 32 JavaScript - Concepts: Functions
- Lesson 33 JavaScript – Functions: Window Method
- Lesson 34 JavaScript – Functions: Math Method

Custom Text Chapter Cross-Reference to Standard Text
We will be using selected chapters from the fifth edition of the Snyder's *Fluency in Information Technology* textbook. The UM bookstore carries the custom edition containing the selected chapters. It contains the chapters in the order they will be presented in the course at a reduced retail price.

Although using the custom edition is recommended, the full edition of the textbook is also available through other textbook vendors. Below is a mapping of the custom textbook and standard textbook chapters.

Custom Text Chapter	Standard Text Chapter	Chapter Title
1.	1.	Defining Information Technology
2.	2.	Exploring the Human-Computer Interface
3.	3.	The Basics of Networking
4.	4.	A Hypertext Markup Language Primer
5.	6.	An Introduction to Debugging
6.	5.	Locating Information on the World Wide Web
7.	11.	Social Implications of IT
8.	13.	The Basics of Spreadsheets
9.	7.	Representing Information Digitally
10.	8.	Representing Multimedia Digitally
11.	10.	Algorithmic Thinking
12.	17.	Fundamental Concepts Expressed in JavaScript
13.	18.	A JavaScript Program
14.	19.	Programming Functions
15.	Appendix A	Appendix: XHTML Reference
16.	Appendix D	Appendix: JavaScript Programming Rules
17.	Appendix E	Appendix: The Bean Counter Program
18.	Appendix F	Appendix: Memory Bank Page