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Spring 1-2016

CSCI 135.01C: Fundamentals of Computer Science I

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Stiff, Steven L., "CSCI 135.01C: Fundamentals of Computer Science I" (2016). *Syllabi*. 4043.
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Missoula College UM
Department of Applied Computing and Engineering Technology (ACET)

Course Number and Title .... **CSCI 135 Fundamentals of Computer Science I**
Term .... **Spring 2016**
Semester Credits **3**
Prerequisites .... **previous programming experience; M 90 or consent of instructor**

Faculty Contact Information

Faculty	Office	Office Hours
Steven (Steve) L. Stiff	GH08-I	T: 1:10 PM – 2:00 PM,
Phone: 243-7913	MC East Campus	R: 10:10 AM – 11:00 AM,
Email: steven.stiff@umontana.edu		R: 2:10 PM – 3:00 PM,
		or by appointment

Class Meeting Times and Final

Section: 01C (CRN 34010)
Day, Time, and Location:
   MWF   8:10am – 9:00am, HB04
Final Exam:
   T, 05/10/2016, 10:10am – 12:10am, HB04

Section: 02C (CRN 34011)
Day, Time, and Location:
   MWF   1:10pm – 2:00pm, HB04
Final Exam:
   T, 05/10/2016, 3:20pm – 5:20pm, HB04

Course Description

Fundamental computer science concepts using the high level structured programming language, Java.

Course Overview

This class is designed to provide the student a good general understanding of software development and the development and implementation of critical-thinking and logical-reasoning skill sets required for the creation of software solutions. This course focuses on the introduction of general programming concepts and of object-oriented programming concepts, using the Java programming language in support of these goals. This course will provide:
- The understanding and implementing general computing concepts.
- The understanding and implementing object-oriented programming concepts.
- The development and implementation of logical-reasoning and critical-thinking skill sets.
- The understanding and implementing of the Java programming language and its constructs.
- Hands-on opportunities to increase proficiency in all concepts covered in this course.

Course Objectives

Upon completion of this course students will:
- Understand the basic components of a computer and how it works.
- Understand and declare primitive data types and object data types and understand the difference between data types.
- Understand and instantiate built-in classes in the Java library, and to create and use custom classes.
- Understand and use UML class diagrams.
- Create graphical programs using appropriate layout managers and event handlers.
- Implement appropriate looping and control structures to solve problems.
- Understand and use flowcharts and flowchart symbols.
- Understand and use the concepts of method overloading and method overriding.
- Create test cases to validate source code.

Required Materials

- ***Java Software Solutions: Foundations of Program Design, 8th Edition***, John Lewis & William Loftus
  Pearson, 2015
  ISBN 9780133594959
- **Eclipse Integrated Development Environment (IDE), Mars**
  http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/mars/1/eclipse-jee-mars-1-win32-x86_64.zip

Evaluation and Grading Criteria

Assessment		Grading Scale	
Assignments, quizzes, projects, etc.	35.0%	100% - 90%	A
Laboratories	30.0%	90% - 80%	B
Exams	35.0%	80% - 70%	C
Attendance Bonus	2.0%	70% - 60%	D
		< 60%	F

Course Policies

Online Component

Various components of the course will be delivered via UMOnline (**http://umonline.umt.edu**) using the Moodle Course Management Software. It is the responsibility of the student to become familiar with and work in Moodle. Moodle training is also available through UMOnline.

Attendance

- Regular classroom attendance is expected and attendance is taken.
- Students more than 10 minutes late for class will not receive credit for attendance.

Attendance Bonus

The attendance bonus is based on course attendance and is added to the student's semester percentage. This policy provides students the possibility of advancing their semester grade to the next grade level by being diligent in their attendance.

The bonus is based on the percentage of contact hours attended as follows:

Attendance %	Bonus %
95% - 100%	2.0%
90% - 95%	1.5%
85% - 90%	1.0%
80% - 85%	0.5%

Assignments and Exams

- All assigned work is due at the assigned time on the assigned date.
- All exams are to be taken at the assigned time on the assigned date.
- **All late or missed work receives a score of 0**. Late work is accepted only in extraordinary circumstances, and is accepted and graded at the instructor's discretion.

Electronic Communication Devices

- All electronic communication devices must be secured, muted, or tuned off prior to the start of class.
- Any use of an electronic communication device during an exam is considered cheating and will be handled at the instructor's discretion (refer to *Student Conduct*).
- Audio and/or video recording of class sessions is not permitted without prior approval of the instructor (refer to *Students with Disabilities*).

Email

This course uses your student email account for all course email communication. Therefore, you are required to monitor and use your student email account for course email communication.

Student Conduct

- *All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University.*
- *Student conduct is governed by the Student Conduct Code. All students need to be familiar with the Student Conduct Code. It is available for review or can be downloaded at* **http://www.umt.edu/vpsa/policies/student_conduct.php**.

Students with Disabilities

- Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely manner. Please be prepared to provide me a copy of your *Letter of Verification* supplied by your *Disability Services for Students* (DSS) Coordinator for my records. Refer to **http://life.umt.edu/dss** or call **406-243-2243** (voice/text) for information regarding your rights.
- When requesting accommodations, please contact me after class or in my office to discuss your needs. This is done in order to maintain your privacy and minimize class disruptions.
- For students requesting examination accommodations, you must supply me the completed Learning Center (LC) scheduling form for my signature at least 3 days prior to the scheduled test date (the LC requires the signed form at least two days prior to testing). LC contact information is available at **http://mc.umt.edu/student_resources/learning_center/** or call **406-243-7826**.

Policies for Dropping and Adding Courses, Changing Sections, Grading, and Credit Status

- The University Policy for dropping courses or requesting grading/credit status changes can be found in the academic catalog or on the web at **http://www.umt.edu/registrar/students/dropadd.php**. All students should be familiar with this policy.
- If you are having difficulty with the course for any reason and decide not to continue, please complete a drop or withdrawal form. A properly completed and approved drop or withdrawal form will prevent you from receiving a failing grade on your college transcript.
- Please note: if you are receiving financial aid, dropping or withdrawing from a course may affect your financial aid status.

Changes to Syllabus

NOTE: The instructor reserves the right to modify the syllabus and assignments as needed based on faculty, student, and/or other circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

Important Semester Dates

CSCI 135 Course Outline
(tentative)

Unit 1   **Introducing Java and Programming Concepts**

1.1   Introduction (Chapter 1)

      A.   Review: Computer Processing
      B.   Review: Computer Components
      C.   Review: Networks
      D.   The Java Programming Language
      E.   Program Development
      F.   Object-Oriented Programming

1.2   Data and Expressions (Chapter 2)

      A.   Character Strings
      B.   Variables and Assignments
      C.   Primitive Data Types
      D.   Expressions
      E.   Data Conversion
      F.   Interactive Programs
      G.   Graphics
      H.   Applets
      I.   Drawing Shapes

1.3   Using Classes and Objects (Chapter 3)

      A.   Creating Objects
      B.   The **`String`** Class
      C.   Packages
      D.   The **`Random`** Class
      E.   The **`Math`** Class
      F.   Formatting Output
      G.   Enumerated Types
      H.   Wrapper Classes
      I.   Components and Containers
      J.   Nested Panels
      K.   Images

1.4   Writing Classes (Chapter 4)

      A.   Classes and Objects Revisited
      B.   Anatomy of a Class
      C.   Encapsulation
      D.   Anatomy of a Method
      E.   Constructors Revisited
      F.   Graphical Objects
      G.   Graphical User Interfaces
      H.   Buttons
      I.   Text Fields

Unit 2   **Continuing Java Concepts and Working with Object-Oriented Design**

2.1   Conditionals and Loops (Chapter 5)

      A.   Boolean Expressions
      B.   The **`if`** Statement
      C.   Comparing Data

    D. The **while** Statement
    E. Iterators
    F. The **ArrayList** Class
    G. Determining Event Sources
    H. Check Boxes and Radio Buttons

2.2   More Conditionals and Loops (Chapter 6)

    A. The **switch** Statement
    B. The Conditional Operator
    C. The **do** Statement
    D. The **for** Statement
    E. Drawing with Loops and Conditionals
    F. Dialog Boxes

2.3   Object-Oriented Design (Chapter 7)

    A. Software Development Activities
    B. Identifying Classes and Objects
    C. Static Class Members
    D. Class Relationships
    E. Interfaces
    F. Enumerated Types Revisited
    G. Method Design
    H. Method Overloading
    I. Testing
    J. GUI Design
    K. Layout Managers
    L. Borders
    M. Containment Hierarchies

CSCI 135 Course Schedule
(tentative)

Week 1   Syllabus Review and Course Overview
            Chapter 1: Introduction

Week 2   Chapter 1: Introduction
            Chapter 2: Data and Expressions

Week 3   Chapter 2: Data and Expressions

Week 4   Presidents Day
            Chapter 2: Data and Expressions
            Chapter 3: Using Classes and Objects

Week 5   Chapter 3: Using Classes and Objects

Week 6   Chapter 3: Using Classes and Objects
            Chapter 4: Writing Classes

Week 8   Chapter 4: Writing Classes

Week 9   Chapter 4: Writing Classes
            Exam 1

Week 10   Chapter 5: Conditionals and Loops

Week 11   Spring Break

Week 12   Chapter 5: Conditionals and Loops
            Chapter 6: More Conditionals and Loops

Week 13   Chapter 6: More Conditionals and Loops

Week 14   Chapter 7: Object Oriented Design

Week 15   Chapter 7: Object Oriented Design

Week 16   Finals Week
            Exam 2