Spring 2-1-2018

CSCI 136.00: Fundamentals of Computer Science II

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Fundamentals of Computer Science CSCI 136 Syllabus Spring 2018

CSCI 136 Section 00
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Overview:

This class is designed to give you a good general understanding of software development and logical reasoning. This course focuses on a continuation of introducing general programming and object oriented programming concepts using the Java programming language. This course will introduce all of these concepts as well as provide a number of hands on opportunities to become proficient in using these tools.

- General Computing Concepts
- Object Oriented Concepts
- Logical Reasoning and Critical Thinking
- Java Programming Constructs

Upon completing this course, a student will be able to:

- Understand the basic components of a computer and how it works
- Declare and understand the difference between primitives and object data types
- Create UML diagrams based on requirement descriptions
- Instantiate and use classes from the built-in Java library as well as custom classes
- Create graphical programs using appropriate layout managers and event handlers
- Implement appropriate looping and control structures to solve problems
- Implement and understand method overloading and method overriding
- Read from files, iterate through the file and manipulate the data within the file
- Create UML diagrams based on requirement descriptions
- Be more proficient with reading and writing files
- Be proficient with using static and dynamic data structures

- Instantiate and use classes from the built-in Java library as well as custom classes
- Create graphical programs using appropriate layout managers and event handlers
- Create Inherited class structures
- Leverage Inherited classes and Interfaces for Polymorphism
- Design and implement recursive algorithms
- Understand basic searching and sorting algorithms
- Make programs more robust with built-in and custom exception handling
- Create class libraries, add them to jar files and reuse them
- Create test cases and leverage them for programs written
- Understand linear and non-linear data structures
- An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- An ability to function effectively on teams to accomplish a common goal
- Recognition of the need for and an ability to engage in continuing professional development
- An ability to use current techniques, skills, and tools necessary for computing practice.

Attendance:

Attendance is mandatory however I realize there are times when you must be absent. It is your responsibility to make up the work. Please give me advance notice of any absences, and I will provide you with the same courtesy.

Class is held Mondays and Wednesdays from 2:00-2:50 pm in GBB 122. Lab is held from 2:00-2:50 pm on Friday in SS 344 or 11:00-11:50 am Thursday in SS 344. We will work in a distributed pair programming this semester. So, please attend so that you can work together.

Grading:

Homework 35%
Labs 20%
2 Exams 15% for each test
Final Exam 15% **Final: May 7th, 2018 3:20 – 5:20 pm**

All Assignments will be submitted through Moodle assignments. If you have trouble with your submission, please send them to

michael.cassens@mso.umt.edu

Your subject must be CSCI 136 Assignment # (e.g CSCI 136 Assignment 1)

If you have multiple files, please zip all your files and label your file: "CSCI136LastNameAssignment1.zip"

Grading Scale

100-90 A, A-   79-70 C+, C, C-   59-and beyond F
89-80 B+, B, B-   69-60 D+, D, D-

P/NP – pass/no pass, 70 or greater is passing determined by Computer Science Department policy, which is a C or better.

Late Assignments:
- Late assignments will not be accepted. Sorry for the inconvenience.

Requirements
- Required Texts**:**
    - **Java Software Solutions 8ᵗʰ edition – Lewis and Loftus**

- Pre-requisites for this course: CSCI 100, CSCI 135
- Required Software:
    - **Java JDK**
        - **http://www.oracle.com/technetwork/java/javase/dow nloads/jdk8-downloads-2133151.html**
    - **Eclipse**
        - **http://www.eclipse.org/downloads/**
        - **Get the installer for your machine and then install Eclipse for Java Developers (should be the choice at the top)**

Suggestions:
- It would be beneficial to read and ask as many questions as you can.
- Feel free to set up an appointment if you need help. I am here to help you understand and do well.

Collaboration:
- I encourage you all to work together through problems – make sure you comment who you worked with at the top of the page, but copying and plagiarism will not be tolerated. If you are caught cheating, I will give you an F for the course.
- Please refer to the Student Conduct Code in how this will be dealt with: http://life.umt.edu/VPSA/student_conduct.php

Incompletes:

"Incomplete for the course is not an option to be exercised at the discretion of students. In all cases it is given at the discretion of the instructor…." Some guidelines for receiving an incomplete are listed in the catalog which include having **a passing grade up to three weeks before the end of the semester** and being in attendance. "**Negligence and indifference are not acceptable reasons**." Also note that there may be financial aid implications.

Late Drops:

The University's policy on drops after **45** days of instruction is very specific. The Computer Science Department follows this policy rigorously. There are five circumstances under which a late drop might be approved: registration errors, accident or illness, family emergency, change in work schedule, no assessment of performance in class after this deadline. Except in very unusual circumstances, I will only approve late drops if there is documented justification for one of these circumstances.

Disabilities:

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at http://life.umt.edu/dss/.

Class Etiquette:
- Be respectful of your fellow classmates.
- Call me anytime if you have a question.
- Profanity and Obscenity will not be tolerated in class or assignments.

Special Dates:

- Jan 22, 2018 Classes Begin
- Feb 19, 2018 President's Day – No Class
- Mar 19th – Mar 22nd, 2018 – I am out of town, class will be online.
- Mar 26th-30th – Spring Break
- May 7th-11th, 2018 Finals
- **Final: May 7th, 2018 3:20-5:20 pm**

Tentative Schedule:

Syllabus Review and Overview of the course
Week 1 Chapter 1,2 Review of CSCI 135
Week 2 Chapters 3 Using Classes and Graphics
Week 3 Chapters 4 Creating classes and more Graphics
Week 4 Chapter 5, 6 Loops and Conditionals
Week 5 Chapter 7 Object Oriented Design
Week 6 Exam 1 **Feb 28, 2018**
Week 7 Chapter 8 Arrays
Week 8 Chapter 9 Inheritance
Week 9 Online activity
Week 10 Spring Break
Week 11 Chapter 10 Polymorphism, Chapter 11 Exceptions
Week 12 Exam 2 **April 11, 2018**
Week 13 Chapter 12 Recursion
Week 14 Chapter 13 Data Structures
Week 15 Databases, XML, Review, Wrap Up
Week 16 Final: **May 7th, 2018 3:20-5:20 pm**