

Fall 9-1-2018

CSCI 136.01C: Fundamentals of Computer Science II

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Missoula College UM**Department of Applied Computing and Engineering Technology**

Course Number and Title CSCI 136 Fundamentals of Computer Science II -
Section 01C (CRN 74227) -
Term Fall 2018 -
Semester Credits 3 -
Prerequisites CSCI 135 and MATH 115 (co-req), or consent of instructor -

Faculty Contact Information

Faculty	Office	Office Hours
Steven (Steve) L. Stiff	MC322	MWF, 11:30 AM – 12:30 PM - or by appointment -
Phone: (406) 243-7913		
Email: steven.stiff@umontana.edu		

Class Meeting Times and Final

Lecture Day, Time, and Location MWF, 9:00 AM – 9:50 AM, MC 025
Final Exam Date, Time, and Location W, 12/12/18, 8:00 AM – 10:00 AM, MC 025

Course Description

Survey of computer science topics including recursion, algorithms, basic data structures, operating systems, artificial intelligence, graphics, user interfaces, and social and ethical implications of computing.

Course Overview

This course's focus is a continuation of the introduction of software programming concepts, program development, and object oriented programming using the Java programming language. This class is designed to reinforce and enhance the student's understanding and ability to implement logical reasoning in the software development process. To that end, this course will provide a number of hands-on opportunities to become proficient in using these tools, including:

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

Course Objectives

Upon completion of this course, the student will have the understanding and ability to implement:

- Primitive data types and object data types
- Looping control structures in problem solving
- Linear and non-linear data structures
- Static and dynamic data structures
- Flowcharts to document program flow of control
- UML diagrams to document a program's classes and their interaction
- Java classes libraries and to create custom classes
- Classes incorporating method overloading and method overriding
- Polymorphism via class inheritance and class interfaces
- Proper reading and writing of data files
- Exception handling to make programs more robust
- Recursion and recursive algorithms
- Basic searching and sorting algorithms
- Test cases to troubleshoot and debug programs
- Graphical programs using appropriate layout managers and event handlers

Required Materials

- Internet Browser – Chrome, Firefox, etc.
- Java Development Kit (JDK); includes the Java runtime environment (JRE) available at: <https://www.oracle.com/technetwork/java/javase/downloads/index.html>
Current release: Java SE 10.0.2 - Java SE 10.0.2 is the latest feature release for the Java SE Platform.
Optional release: Java SE 8u181 - Java SE 8u181 includes important bug fixes. Oracle strongly recommends that all Java SE 8 users upgrade to this release
- Netbeans IDE. The full Netbeans application that supports all flavors of Java (SE, FX, EE, ME) as well as PHP, C/C++, and others is available at: <https://netbeans.org/downloads/start.html?platform=windows&lang=en&option=all>
- Notepad++ text editor
- Subscription to the zyBooks course.

zyBooks Course Subscription

1. - Sign in or create an account at learn.zybooks.com
2. - Enter zyBook code: **MCCSCI136StiffFall2018**
3. - Subscribe to the course. Your subscription is \$77. Your subscription is valid until Dec 27, 2018.

Evaluation and Grading Criteria

<u>Assessment</u>		<u>Grading Scale</u>
Homework	40.0%	100% - 90% A -
Labs	30.0%	90% - 80% B -
Exams	30.0%	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 UOnline (<http://umonline.umt.edu>) using the Moodle Course Management Software. It is the responsibility of the student to be familiar with, and able to work in, the Moodle **shell**. Moodle training is available through UOnline at [Moodle 101 for Students](#).

Careers and Professional Development

As you progress through the IT program coursework towards a certificate in IT and an Associate of Applied Science degree in IT, never lose sight of the fact that you are pursuing a career choice. A number of the topics covered in this Course Policies section of the syllabus discuss the expectations of this course, similar to the expectations of an employer. These topics emphasize particular aspects of professional development and personal responsibility such as attendance, assignment completion, and classroom behavior, much the same as an employer emphasizes being on time, on task, and representing the company.

Be sure to review the topic on **Careers and Professional Development** in the **Course Information: Things You Need to Know** section of this course’s Moodle shell.

Attendance

- Regular classroom attendance is expected and attendance is taken.
- Students more than 5 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 awarded as follows:

Attendance %	Bonus %
94% - 100%	2.0% -
88% - 94%	1.0% -

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 all 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/vpesa/Dean%20of%20Students/default.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/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 form. A properly completed and approved drop form will prevent you from receiving a failing grade on your college transcript.
- Please note: if you are receiving financial aid, dropping 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. When changes are made to the syllabus, a dated, amended copy will be made available to the class.

Semester Dates

- Mon, August 27..... Autumn Semester Classes Begin -
- Mon, September 3 Labor Day – No Classes, Offices Closed -
- Tue, November 6 Election Day – No Classes, Offices Closed -
- Mon, November 12..... Veterans Day Observed – No Classes, Offices Closed -
- Wed-Fri, November 22-23 Thanksgiving Break – No Classes, Offices Closed -
- Mon-Fri, December 10-14..... Final Exams -

ITS 136 Course Outline

(tentative)

Unit 1: Starting out with Java

- Unit 1-1 Introduction to Java
- Unit 1-2 Basic Objects
- Unit 1-3 Basic Methods and Classes
- Unit 1-4 Data Types
- Unit 1-5 Branches
- Unit 1-6 Loops
- Unit 1-7 GUIs

Unit 2: Working with Java Data Structures

- Unit 2-1 Arrays
- Unit 2-2 Methods and Classes Continued
- Unit 2-3 Inheritance; Abstract Classes and Interfaces
- Unit 2-4 Generics and Collections
- Unit 2-5 JavaFX

Unit 3: Java and the Real World

- Unit 3-1 Input / Output
- Unit 3-2 Exceptions
- Unit 3-3 Memory Management
- Unit 3-4 Recursion
- Unit 3-5 Searching and Sorting

ITS 136 Course Schedule

(tentative)

- Week 1: Course Introduction
 Unit 1-1: Introduction to Java
- Week 2: Labor Day
 Unit 1-2: Basic Objects
- Week 3: Unit 1-3: Basic Methods and Classes
- Week 4: Unit 1-4: Data Types
- Week 5: Unit 1-5: Branches
 Unit 1-6: Loops
- Week 6: Unit 1-7: GUIs
- Week 7: Unit 2-1: Arrays
- Week 8: Unit 2-2: Methods and Classes Continued
- Week 9: Unit 2-3: Inheritance; Abstract Classes and Interfaces
- Week 10: Unit 2-4: Generics and Collections
- Week 11: Election Day
 Unit 2-5: JavaFX
 Unit 3-1: Input / Output
- Week 12: Veterans Day
 Unit 3-2: Exceptions -
- Week 13: Unit 3-3: Memory Management -
 Thanksgiving Break -
- Week 14: Unit 3-4: Recursion
- Week 15: Unit 3-5: Searching and Sorting
- Week 16: Final Exam, Wednesday, 12/12/18, 8:00 AM – 10:00 AM, MC 025