CSCI 150: Introduction to Computer Science – Spring 2025

Instructor information

Instructor: Jeff Arends
Office: MC324
Email: jeffrey.arends@mso.umt.edu
Office hours: M&W 11-12. T&Th 2-3, or by appointment (or drop-in whenever my door is open)

Course description:

This course will introduce you to the field of computer science and the fundamentals of computer programming. CS150 is specifically designed for students with no prior programming experience, and touches upon a variety of fundamental topics. This course uses the programming language Python.

Learning Outcomes:

1. Apply knowledge of basic principles of procedural programming.
2. Write short (less than 50 lines of code) programs in the Python language that use basic control structures including assignment, conditional testing, iteration, branching, and functions.
3. Create a working program from a model of a problem.
4. Apply the concept of a function to reduce the complexity of a program into manageable tasks with well-defined inputs and outputs.
5. Reuse software by using libraries.

Required Materials and Resources:

- You will need to have a laptop with the following minimum requirements:
    - Windows, macOS or Linux
    - 4GB of RAM (16GB preferred)
    - 64 GB of HDD space
    - 2.0 GHz processor
- We will be using an online platform called zyBooks for this course. A subscription is required ($89). Follow a link from Canvas to log in to zyBooks.
- We will use the programming language Python for this course. You can download it for free at https://www.python.org/.

Course Calendar:

Dates (Normal)	Topic (Normal)
Week 1 - Jan 13	Introduction to Programming, Programming Environments, Setting up Python, Basic Input and Output
Week 2 - Jan 20	Programming Errors, Variables, Python Objects, Expressions
Week 3 - Feb 27	Built-in Data Types and Data Structures, Type Conversion
Week 4 - Feb 3	Branching, Booleans, Logical Operators
Week 5 - Feb 10	Functions, Scope of Variables
Week 6 - Feb 17	String Formatting
Week 7 - Feb 24	Version Control, IDE Choice, Exam 1
Week 8 - Mar 3	Modules, Test Clients, Modular and Incremental Development
Week 9 - Mar 10	Looping, While Loops, For Loops, Breaking out of Loops
Mar 17	Spring Break
Week 10 - Mar 24	Lists, Dictionaries, Nested Loops
Week 11 - Mar 31	Command Line Basics, Files
Week 12 - Apr 7	Event Driven Programming, Using Existing Data Types, Create Graphics
Week 13 - Apr 14	Creating Custom Data Types, Constructors, Class Methods
Week 14 - Apr 21	Error Handling
Week 15 - Apr 28	Project Presentations
May 5	Final Exam

Required assignments and tests:

- zyBooks Reading
- zyBooks Labs
- Quizzes
- Assignments
- Multi-Week Project
- 1 midterm Exam
- 1 final Exam

Course guidelines and policies:

Student Conduct Code

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 Student Conduct Code.

Disability modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with them, you can email them at ode@umontana.edu.

Assignment expectations

The first part of each week (sections 1 and 2) will be due on Monday nights, with the section 3 due on Wednesday nights. Late work will suffer a flat 20% penalty, with hard cutoff dates on Feb 16 and Mar 15. No late from before these dates will be accepted after these dates.

Grading Criteria

Assessment	Description	Percentage
zyBooks Reading	zyBooks consists of some text as well as extensive use of animations and learning questions. Students will be required to complete participation and challenge activities. A **participation activity** is usually an animation or learning question, for which a student's completion is visible to an instructor, and for which any student can get 100% completion just by participating. A **challenge activity** requires the student to answer correctly, without us giving away the exact answer. Challenge activities are small tasks that give students practice.	10%
zyBooks Labs	zyLabs are programming assignments located at the end of zyBooks chapters. Students submit their code and get a score based on the test cases passed. Students receive immediate feedback and can re-submit for a better score (unlimited submissions until the assignment deadline).	20%
Assignments	Each module, students will complete one assignment that demonstrates their understanding of the module's learning outcomes. During the second half of the semester, these assignments build on each other into a longer project that will be presented at the end of the semester	40%
Quizzes	Most modules, students will complete 1-3 short Moodle quizzes on content presented in that module.	10%
Exams	There will be two exams worth 10% each.	20%
Total:		100%

Grading Scale

Grade	Points	How this applies to assignmnts
A, A-	90-100	**Exceeds Standard:** The student has gone above and beyond the assignment requirements and has also done an excellent job mentioning and applying concepts found in the course materials to the assignment.
B+, B, B-	80-89	**Meets Standard:** The student has met the assignment requirements and has made some attempt to apply concepts found in the course materials to the assignment.
C+, C, C-	70-79	**Approaching Standard:** The student has met some of the assignment requirements and has made some attempt to apply concepts found in the course materials to the assignment.
D+, D, D-	61-69	**Needs Work:** The student has failed to meet many of the assignment requirements and has not applied the concepts found in the course materials to the assignment.
F	<61	**Incomplete:** The student has failed to meet any of the assignment requirements and has significant errors in submitted work.

Pass / No Pass (P/NP)

The Computer Science Department has determined that a passing grade is a 70% or greater, which is a C- or better.