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CSCI 150.B01: Introduction to Computer Science

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CSCI 150: Introduction to Computer Science

Instructor information

Instructor: Jeff Arends
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Office hours: Tuesday 11-12, Thursday 1-2

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 processorxt)
- We will be using an online platform called zyBooks for this course. A subscription is required, and you can sign in or create an account at https://learn.zybooks.com/.
  - Enter zyBooks code
  - UMTCSCI150ArendsFall2021
  - Subscribe
- 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)
	Introduction to Programming, Programming Environments, Setting up Python, Basic Input and Output

Dates (Normal)	Topic (Normal)
	Programming Errors, Variables, Python Objects, Expressions
	Modules, Built-in Data Types and Data Structures
	Type Conversion, String Formatting, Branching, Equality and Relational Operators
	Booleans, Logical Operators, More Branching
	Review, Exam 1
	Looping, While Loops, For Loops
	Command Line Basics, Nested Loops, Breaking out of Loops
	Client Programs, Importing Existing Data Types, Using Control Structures to Create Graphics
	Functions, Type System, Event Driven Programming
	Finite-State Machine Introduction, Automatic Events
	Modular and Incremental Development, Scope of Variables and Functions
	Modules (containing functions) with Test Clients, Strings
	Lists
	Review, Final Exam

Required assignments and tests:

- zyBooks Activities
- zyLab Activities
- Quizzes
- 15 Assignments
- 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 Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Assignment expectations

All assignments, quizzes and activities have deadlines specified in the module.

Grading Criteria

Assessment	Description	Percentage
zyBooks	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.	15%
zyLabs	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).	15%
Assignments	Each module, students will complete one assignment that demonstrates their understanding of the module's learning outcomes.	30%
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 15% each.	30%
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-	60-69	**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	<60	**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.