Spring 2-1-2022

# CSCI 150.00: Introduction to Computer Science

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# CSCI 150: Introduction to Computer Science

## Instructor information

Instructor: Trish Duce
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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
  - UMTCSCI150DuceSpring2022
  - Subscribe
- We will use the programming language Python for this course. You can download it for free at https://www.python.org/.

## Course Calendar:

| Module/Dates | Topic |
|---|---|
| 1. Jan 19th, 2022 | Introduction to Programming, Programming Environments, Setting up Python, Basic Input and Output |
| 2. Jan 24th, 2022 | Programming Errors, Variables, Python Objects, Expressions |
| 3. Jan 31st, 2022 | Modules, Built-in Data Types and Data Structures |
| 4. Feb 7th, 2022 | Type Conversion, String Formatting, Branching, Equality and Relational Operators |
| 5. Feb 14th, 2022 | Booleans, Logical Operators, More Branching |
| 6. Feb 23rd, 2022 | Review, **Exam 1** |
| 7. Feb 28th, 2022 | Looping, While Loops, For Loops |
| 8. Mar 7th, 2022 | Command Line Basics, Nested Loops, Breaking out of Loops |
| 9. Mar 14th, 2022 | Client Programs, Importing Existing Data Types, Using Control Structures to Create Graphics |
| 10. Mar 28th, 2022 | Functions, Type System, Event Driven Programming |
| 11. April 4th, 2022 | Finite-State Machine Introduction, Automatic Events |
| 12. April 11th, 2022 | Modular and Incremental Development, Scope of Variables and Functions |
| 13. April 18th, 2022 | Modules (containing functions) with Test Clients, Strings |
| 14. April 25th, 2022 | Lists |
| 15. May 2nd, 2022 | Review, **Final** |

## 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

Students with disabilities will receive reasonable modifications in this course. Your responsibilities are to request them from me with sufficient advance notice, and to be prepared to provide verification of disability and its impact from Disability Services for Students. Please speak with me after class or during my office hours to discuss the details. For more information, visit the Office for Disability Equity website at http://www.umt.edu/disability.

## Assignment expectations

All assignments, quizzes and activities have deadlines specified in the module. **NO LATE WORK WILL BE ACCEPTED.**

## 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 | <59 | **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.