CS 1400 Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: Computer Science
Course and Section #: 1400-003
Course Title: Fundamentals of Programming
Credits: 3

Course Description

CS 1400 introduces techniques and tools to formulate and solve problems where computer algorithms and programs are a core part of an effective, repeatable solution. It teaches algorithmic thinking using procedural programs composed of sequences of commands, functions, loops, conditionals, and basic data structures. A Lab access fee of $45 for computers applies.

CS 1400 is not a GE course. It is required for Computer Science majors, Engineering majors and a growing number of other majors. It is also a nice elective choice for any major where it is not required.

Course Attributes

This course has the following attributes:
☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☒ Elective Core Requirements in Program
☒ Open Elective
Other: *Click here to enter text.*

Instructor Information

Instructor Name: Xi Chen

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- Design procedural solutions to programming problems
- Implement procedural solutions to problems with appropriate use of sequences of commands, functions, variables, conditionals, looping, files, lists, and libraries.
- Test programs to assure that solutions are correct and complete.
- Design readable, maintainable code, using a good, consistent programming style.

Course Materials and Texts

Required materials, fees and technology:

- Lab access fee of $45 for computers applies.
- CodioLinks to an external site., which is required for the textbook and assignments

To access Codio:

1.
    1. Click on **Modules** in Navigation at the left.
    2. Scroll down to Module 1 or any linked assignment or reading, and click on it. This will take you to a screen to access Codio.
    3. Students should purchase access and set up an account. Use a credit card to purchase access. Use the same email that you use for UVU login credentials. Make sure that you have **popups** enabled in your browser.

- Canvas
- Python 3.10 or later
- Extra Python modules you want to install
- A Python IDE (Integrated Development Environment):
    - Python.orgLinks to an external site. lists several popular Python IDEs and bundles.
    - ThonnyLinks to an external site. is a good IDE for beginners and includes an appropriate version of Python.
    - AnacondaLinks to an external site. is a popular Python distribution that installs many useful scientific libraries.

Optional materials, fees and technology:

- There are thousands of interesting Python modules and libraries to play with for graphics, art, music, game development, scientific computing, business, economics, and beyond. Adventuresome students are encouraged to experiment beyond the scope of this class.
- The OnStudy Discord ServerLinks to an external site. has a CS 1400 channel where you can connect with instructors and other students

Software Licenses:

- Any versions of Python required for this course are both free and open source. No paid license is needed.
- All extra modules used in the course are free. Most are also open source.
- Thonny, a simple IDE that we recommend for beginners to use, is free and open source (MIT License).
- The textbook and assignments are hosted on Codio, which does require a paid license.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Students earn points for completing assignments. To earn points, students must demonstrate that they have mastered the material; it is not the instructor's job to show that they have not.

Grading Scale:

The following grading standards will be used in this class:

Grade	Percent
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
E	0-59

CS majors need a C+ minimum to pass for matriculation. Other majors may have different standards for passing. It is up to the student to know the standards that apply.

Assignment Categories

Activity	Percent
Required Readings	8%
Discussions	2%
Programming Projects	40%
Coding Exercises and Labs	15%
Midterm Exams	20%
Final Project	15%
Extra Credits	3%

Late Work Statement:

Late submissions do not earn full credit; the number of points earned is reduced when the assignment is graded. All assignments are due at **11:59:59 pm** (Mountain time) on the date assigned. Homework assignments are penalized 10% per weekday after the due date to a maximum of 20%. Projects are penalized 20% for being late. Late work may or may not receive feedback at the instructor's discretion. There are no make-up exams. You will have **five grace days** to be claimed for any programming project assignment during the semester. When using a grace day, please let your instructor and TA know.

Assignment and Assessment Descriptions

Assignments:

This course includes weekly reading and exercises, five programming projects, two exams, and a final project (final exam). All graded assignments except in-class activity are submitted via Codio. All assignments except programming assignments may be reset and resubmitted at will by students.

Weekly homework assignments:
The assigned textbook readings include exercises designed to help you practice and apply the concepts incrementally. You will complete these exercises in Codio as part of the reading. Grades for the readings are based on **completeness**, not correctness, meaning you will receive full credit as long as you finish

the reading and attempt the exercises. Once completed, your grade will be manually updated to 100/100 by your instructor or I.A.

Programming projects:
There are five programming projects, which are all listed in Codio. Read each project description very carefully before starting it. Projects are submitted on the Codio platform.

Discussions:

Discussions will be opportunities to explore topics together. Posts to the discussion should add significantly to the conversation and support your point of view. Comments that do not add significantly to a discussion will receive no credit. It is okay to disagree in a discussion. In fact much learning happens when we disagree. However, we need to be respectful and keep our classroom a safe place to learn.

Due dates for discussions correspond with the initial post date which is usually a Thursday. Follow-up comments are due by Friday. Follow-up posts are expected to be after the due date and are not marked as late. Discussions conclude by the Friday following the due date. After this, posts will be marked late.

Assessments:

Assessments will be administered in Codio.

Required or Recommended Reading Assignments

Module 1 Readings: Printing; Variables; Arithmetic Operators; Boolean Operators

Module 2 Readings: Strings Basics; Formatting Strings

Module 3 Readings: If Statement; If Else Statement; Compound Conditionals; If Elif Else Statement

Module 4 Readings: For Loops; While Loops; Nested Loops; Functions Basics

Module 5 Readings: Parameters; Returning Values; List Basics; List Operators; List Methods; List of Numbers; List Iteration

Module 6 Readings: 2D Lists; Writing to a File

Module 7 Readings: Reading a File

Module 8 Readings: Functions - Advanced Concepts; Variable Scope

Module 9 Readings: Introduction to Tuples; Built-In Tuple Functions.

Module 10 Readings: Built-In Tuple Methods; Manipulating Tuples

Module 11 Readings: Introduction to Dictionaries; Iterating Over Dictionaries; Nested Dictionaries

Module 12 Readings: Dictionary Functions, Operators & Methods

Module 13 Readings: Strings Functions; String Methods, String Iteration; String Comparison

Module 14 Readings: What Is Recursion?

General Description of the Subject Matter of Each Lecture or Discussion

Module 1: Python Basics and Operators

Module 2: Operators and Strings Basics

Module 3: Conditionals

Module 4: Loops and Function Basics

Module 5: Parameterized Function and List Basics

Module 6: 2D List and File Writing

Module 7: Reading Files

Module 8: Function Advanced Concepts

Module 9: Tuple

Module 10: Tuple II

Module 11: Dictionary

Module 12: Dictionary II

Module 13: String II

Module 14: Recursion

How This Course Works

Course Mode:

This course is taught face to face.

As a student, you are expected to attend class as scheduled. If you are unable to attend, it is your responsibility to catch up on missed material outside of class and ensure that all coursework is completed by the assigned due dates.

Description of how the course works:

Computer science involves:

- attention to detail,
- memory,
- abstract thinking,
- creativity and intuition, and
- dedication

These skills can all be developed with time and practice. Be prepared to experience both frustration and elation as you work on difficult problems that affect both your mood and your grade. CS 1400 is designed to help you develop these skills.

The Tips for Success module has articles on note taking and problem-solving, which will help you succeed in this class.

Assignments
This course includes weekly reading and exercises, five programming projects, and three exams. The final exam is Project six, which is weighted as both a project and the final exam. All graded assignments except in-class activity are submitted via Codio. All assignments except programming assignments may be reset and resubmitted at will by students.

Course help resources
You have many resources available to you to help you as you study. Consider doing any or all of the following:

- Meet with your instructional assistant.
- Ask your instructor
- Join a study group
- Join the CS1400 channel on the OnStudy Discord Server.

Expected time:
For this three-credit course, students should expect to spend at least **9 hours** per week completing course activities,
including class time. A block class or summer section typically requires double the pace and double the time
commitment per week. It is strongly recommended that you schedule class and homework time in advance.

Third-Party Usage:

Please review the Terms and Conditions of Use, including the Privacy and Data Usage policies of the following providers:

- Codio: Terms and Conditions of Use.
- Discord: Terms of Service. Privacy Policy.

Required Course Syllabus Statements

Generative AI
Statement on using ChatGPT (and similar tools) for this class: Use ChatGPT as a Learning Assistant, not an Oracle. ChatGPT can significantly streamline the learning process for students in a

programming class, but it's crucial to ensure that it doesn't inadvertently promote dependency or shortcut genuine understanding. The tool can provide immediate help on complex topics and code troubleshooting. Many companies are expecting students to graduate knowing how to use it to generate code, so using it can no longer be considered cheating or plagiarism. Nevertheless students are encouraged to independently problem solve and think critically. These most important skills in programming are best developed through a balance of self-led exploration and learning with an assistant.

Using Remote Testing Software

☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and

writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX
Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation
UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.
To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.