Master 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: CS
Course and Section #: CS1400-001
Course Title: Fundamentals of Programming
Credits: 3

Course Description

This course introduces techniques and tools to formulate and solve problems where computer algorithms and programs are a core part of an effective, repeatable solution. Demonstrates algorithmic thinking using procedural programs composed of sequences of commands, functions, loops, conditionals, and basic data structures.

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: Wayne L Johnson

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

Each student is expected to have access to a computer with a browser and Internet access. If a student is prevented from installing additional software, web-based programming environments are available.

The primary course requirement is a "Codio" license. This is a 3rd-party application that ties back to Canvas. All required reading, weekly homework exercises, projects, and exams, are completed in Codio. The only graded assignments in Canvas are the weekly discussion assignments.

Optionally the user may choose to download an IDE ("Integrated Development Environment") to assist them with their software development. There are several good free IDEs for all OS platforms: Windows, MAC, and Linux. These include, but are not limited to, Thonny, PyCharm, Anaconda, and MS Visual Studio.

Course Requirements

- MAT 1000 or MAT 1010 with a B or better, or MAT above 1010, or ACT score 23 or higher, or ALEKS score 38 or higher
- CS 1030 is recommended

Required or Recommended Reading Assignments

- Weekly reading (5%)
- Weekly discussions (5%)
- Weekly homework exercises (15%) – covers the reading and class material
- Five programming projects (40%)
- Two exams (20%, 10% each) – exams are closed book, and taken
- Final project (15%) – this project doubles as the final exam
- Extra Credit (2%)

Final grades are rounded to the nearest tenth and assigned the corresponding letter grade:

A = 93-100	B - = 80-82.9	D+ = 67-69.9
A - = 90-92.9	C+ = 77-79.9	D = 63-66.9
B+ = 87-89.9	C = 73-76.9	D - = 60-62.9
B = 83-86.9	C - = 70-72.9	E = 0-59.9

General Description of the Subject Matter of Each Lecture or Discussion

Each week consists of two 75-minute class periods. The following topics are discussed during the weeks listed. Projects and Exams are also shown

- Week 01: Python Basics and Operators
- Week 02: Operators and String Basics
  Project I (Yondu Udonta)
- Week 03: Conditionals
- Week 04: Loops and Function Basics
- Week 05: Parameterized Function and List Basics
  Project II (Caesar Cipher)
- Week 06: 2D Lists and File Writing
  Exam 1
- Week 07: Reading Files
- Week 08: Function Advanced Concepts
  Project III (Magical Creatures)

- Week 09: Tuples
- Week 10: Spring Break
- Week 11: Tuples, part II
- Week 12: Dictionaries
  Project IV (Library of Congress)
- Week 13: Dictionaries, part II
- Week 14: Strings, part II
- Week 15: Recursion
  Exam 2
  Project V (Random Walk)
- Week 16: Final Exam – Project 6 (Was Clinton Right?)

Required Course Syllabus Statements

Generative AI
This course requires you to complete assignments that assess your understanding and application of the material. You are expected to do your own work, and the use of artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, is strictly prohibited during self-administered exams. These tools may be used to help create a general outline for the projects but cannot be used to generate code. Using these tools otherwise will be considered academic dishonesty and will be handled according to the university's policy. If you have questions about acceptable use of AI tools, please consult the instructor before submitting your work.

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.