CSIS 1595: Fundamentals of Programming and Problem-Solving 1/Lab

Fall Semester 2023 – CRN 42292/45651
5:10 pm - 6:25 pm Mon/Wed Meshel Hall 337/350

Course Syllabus and Objectives

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Website: http://jwdittrich.people.ysu.edu/CSIS_1595/

Prerequisites
CSIS 1590: Survey of Computer Science and Information Systems, or MATH 1507: Intermediate Algebra, or Level 40 on the Math Placement Test. Note that CSIS 1595 requires no previous experience with programming.

Programming Sequences
CSIS 1595 the first in a two-course sequence meant to give a comprehensive introduction to the design and implementation of computer programs. The second course in the sequence, CSIS 2605: Fundamentals of Programming and Problem Solving 2, builds on the material introduced in this course (and should be taken in the next semester if you plan on taking it).

An alternative path is CSIS 2610: Programming and Problem Solving, which covers the material in CSIS 1595 and 2605 in a single semester. If you have prior experience with programming (and the prerequisite of Math 1513 or Level 50 on the Math Placement Test), then you should consider registering for that course instead. Note that credit will not be given for both CSIS 1595 and CSIS 2610.

Textbook
• Starting Out with Python (5th Ed), Tony Gaddis - ISBN 13 : 9780135929032

Optional reference
• The Practice of Computing Using Python (3rd Ed), Punch & Enbody – ISBN-13: 978-0134520513
• Think Python: How to Think Like a Computer Scientist (1st Ed.), Downey, Allen B. – ISBN-13: 978-1449330729

The electronic version of the Downey textbook above is freely available under the GPL license at: http://www.greenteapress.com/thinkpython/thinkpython.pdf

Other Materials
A user account on https://replit.com for code collaboration and https://discord.com for screenshares/voice chat.

You should have at least one USB flash drive for this course, as it will make it easier to move programs back and forth between labs and your own computer, as well as to bring to office hours if you have questions about an assignment. As with any other storage, you should back it up regularly (Dropbox, Google Drive, and MEGA are good cloud-based backups)!

Description
Introduction to concepts, principles, and skills of programming using a high-level programming language. Topics include language characteristics, an integrated development environment, algorithms and pseudocode, variables, operators, conditional statements, functions, arrays, testing, debugging, documentation, and program style. Two hours lecture and two hours lab.

Learning Objectives
This course is meant to introduce you to:

- Concepts common to all programming languages (including data types, numeric and string manipulation, control structures, and functions).
- Principles of program development (including development environment tools, modular program design, testing and debugging, and documentation).
- The Python programming language.

Grading

Your grade is determined from the following sources:

- Programming labs and participation (10%) – small, simple assignments during the first weeks of the semester
- Programming projects (42%) – two large and involved projects during the latter parts of the semester
- Exam 1 (12%) – Wednesday, October 11th
- Exam 2 (12%) – Wednesday, November 1st
- Final Exam (comprehensive, 24%) – Monday, December 11 @17:30-19:30

Programming Assignments and Projects
In general, programming assignments will be handed out on a Wednesday, and will be due the following Monday. These will be relatively simple exercises meant to give you practice with the current programming topic.

There will also occasionally be larger projects meant to give you experience in designing and developing significant programs based on the principles introduced earlier in the course.

Grading of the assignments will only partially be based on their correctness. Grades will also be based on good programming style and documentation, clarity of thought, and general cleverness in design approaches. I give ample opportunity to earn bonus points for inclusion of extra features and program functionality.

Late assignments will be penalized at 10% per working day, and no assignments will be accepted after solutions are posted (generally one week after the due date). Work on these assignments **must be your own** (see below on academic honesty for more details).

Lectures/Labs
Each class day will consist of either a lecture section (Mondays from 5:10 to 6:50) in room 337, or a lab section (Wednesdays from 5:10 to 6:50) in room 350.

Some of the lab time may be used for short demonstrations and debugging exercises related to the current topic. The remaining lab time may be spent working on and getting help with the homework assignments.

However, note that you will be expected to do most of the work on the assignments outside of class/lab time. Python3 and the IDLE integrated development environment are available as free downloads from www.python.org.

Faculty Evaluations
Any course is only as good as the instructor's ability to engage with students and make the material meaningful and relevant to your current and future endeavors. Your insights are valuable; in order to continuously improve and fine tune the learning activities and address the differences in student learning styles, course evaluations are typically made available after Midterm Exams via Web link, watch your student email for further details. I will remind you to take the opportunity to provide feedback at the conclusion of the course.

Honors Contracts
This class is eligible for an honors contract, if you are interested in receiving honors credit for this course, please inquire as soon as possible to discuss possible supplemental projects/papers that will qualify.

Important Dates for Fall 2020 Semester
08/28/2023 Fall Term BEGINS
09/04/2023 UNIVERSITY CLOSED (Labor Day)
09/05/2023 Last day to add or change a grading option
09/10/2023 Last day to withdraw and receive 100% refund or reduction in charges
10/29/2023 Last day to withdraw with a grade of "W"
11/10/2023 UNIVERSITY CLOSED (Veteran's Day)
11/23/2023 UNIVERSITY CLOSED (Thanksgiving Day)
11/24/2023 UNIVERSITY CLOSED (Columbus Day, Observed)
12/11/2023 Final Exams Begin
12/15/2023 Fall Term ENDS
03/01/2024 Last day for completing an "I" grade for Fall 2023

Topic List and Tentative Calendar

Week	Lecture Topics
1 (8/28)	Review Syllabus, Introduction to programming and labs **reading: Chapter 1**
2 (9/4)	**Labor Day - NO CLASS Monday 9/4** Basic I/O, variables and assignment, Data Types **reading: Chapter 2**
3 (9/11)	Arithmetic operators and expressions, operator precedence **reading: Chapter 2**
4 (9/18)	Monday - Lab time / no lecture Conditional statements and relational operators, Testing programs with branches **reading: Chapter 3**
5 (9/25)	Nested control statements, Input validation **reading: Chapter 3**
6 (10/2)	Counter loops, Conditional loops, Testing programs with loops Lists, Dictionaries, and Sets **reading: Chapter 4, 7, 9**
7 (10/9)	Project 1: Design with branching and loops Algorithm design and program development **Exam 1** Wed 10/11 **reading: Chapter 4, 7, 9**
8 (10/16)	String manipulation **reading: Chapter 8**
9 (10/23)	Introduction to functions Project 2: Design with functions **reading: Chapter 5, 12**
10 (10/30)	Large-scale program design and decomposition using functions, Testing with functions **Exam 2** Wed 11/1 **reading: Chapter 5, 12**
11 (11/6)	Scoping and parameters **reading: Chapter 5, 12**
12 (11/13)	Reading from and writing to text files **reading: Chapter 6**
13 (11/20)	Program design with simple data structures **reading: Chapter 10, 11**

14 (11/27)	Project 3: Design with data structures **reading: Chapter 10, 11**
15 (12/4)	Lab time, Q&A, and Project 3 troubleshooting
16 (12/11)	Finals Week - https://ysu.edu/registrars-office/final-exam-schedule **Final Exam** Monday, December 11 @17:30-19:30

General Course Policies and Guidelines

Grading

The course grade will be based on the required material:

- 90% will guarantee at least an 'A' for the course,
- 80% will guarantee at least a 'B' for the course,
- 70% will guarantee at least a 'C' for the course, and
- 60% will guarantee at least a 'D' for the course.

Assignment Submission

Most assignments that you write for the class will be submitted via email. When submitting assignments, do the following:

- Submit to the instructor's preferred, correct email address, as above (Gmail).
- Include your name(s), course number, and the title of the assignment in the subject header.
- Attach all code/documents. If there are issues with the size/number of attachments, please use a zip utility to compress into a single file. Files should be named in the form of jwdittrich_assignmentname.py

*Assignments that do not follow this protocol **will not be scored**, and you will receive zero credit unless resubmitted.*

Due Dates and Late Assignments

An assignment (including programs and projects) is late if it is not IN MY POSSESSION (either as hardcopy or electronically) by midnight on the due date. Late assignments may be penalized at some percentage (usually 10%) per day late (the weekend counts as one day), and no credit will be given for assignments turned in after solutions have been discussed or handed out. Extenuating circumstances (such as nonfunctional labs) may be recognized if they become a chronic problem.

Attendance
Class attendance is optional, except for students who are receiving VA benefits, or in situations (such as group meetings) where your absence would be detrimental to other students in a group. However, missing class is not an acceptable excuse for failure to complete required material on time. Every lecture will cover material related to assignments and exams, and in general the grades in programming classes are directly related to the number of lectures attended. Material that is presented in class will not be covered again outside of class – if you miss class, it is up to you to find out what was covered and to get the notes from someone else. I have found that regular attendance is a fairly good predictor of success in this course.

Exams
Exams will cover material presented in class and corresponding required sections in the text, and will also usually relate to material covered in the homework. Makeup exams are allowed, but only for compelling and verifiable reasons. I need to be informed as soon as possible if you need to take a makeup (ideally, before the exam is given), and I reserve the right to refuse if too much time has passed since the exam, or if no compelling reason is given.

Office Hours
The best way to get help with an assignment is to stop by my office during office hours. Many problems that you might get "stuck" on for hours upon end can usually be fixed with my help within a few minutes.

Email
The best way to reach me with questions outside of office hours is email (james.dittrich+YSU@gmail.com). I will attempt to answer within 48 hours (except for holidays, weekends, and breaks). Items sent to my campus address do NOT get to my mobile devices, and I therefore cannot guarantee prompt responses. There are some things that you can do to help out:

- Text me or Discord DM me after you send the email to let me know you have an urgent question.
- Include your name and course number in the subject (otherwise it might not make it through the spam filters). Follow up your email with a quick text letting me know you've emailed.
- Be as specific as possible about the question or problem.
- If it is a problem with a program, be sure to attach the relevant source code. However, depending on the type of program and where I happen to be, I may not be able to help right away (my office hours are usually better for getting help with programs); links to a public https://repl.it repository can help.

Most assignments that you write for the class will be submitted via email. When submitting assignments by email, do the same things:

• Include your name, course number, and the number of the assignment in the subject.
• Attach all code/documents. If there are issues with the size/number of attachments, please use a zip utility to compress the collection into a single file.

Class participation
If you do not ask questions in class, you will not get as much out of the class as you could. Your class participation will be based on the instructor's assessment of whether you are regularly involved in the class over the course of the semester.

• **Note:** Class participation ***may*** affect your grade if there is a borderline grade decision.
• If you receive a failing grade in class, and have missed 25% or more of the classes, you will receive a NAF (Non Attendance Failure) as your final grade. This may negatively impact your future financial aid eligibility.

Mandatory Statement of Non-Discrimination from the University
Youngstown State University does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity and/or expression, disability, age, religion, or veteran/military status in its programs or activities. Please visit our accessibility website for contact information for persons designated to handle questions about this policy.

Students with Disabilities
In accordance with University procedures, if you have a documented disability and require accommodations to obtain equal access in this course, please contact me privately to discuss your specific needs. You must be registered with the Center for Student Progress Disability Services, located at Kilcawley Center 2082, and provide a letter of accommodation to verify your eligibility. You can reach CSP Disability Services at 330-941-1372.

Academic Support
The Marion G. Resch Academic Success Center (https://ysu.edu/academic-success-center) is a resource on Campus established to help students successfully complete their university experience. Please phone (330) 941-3538 or visit the Center for assistance in tutoring or for individualized assistance with social and academic success. The main Center is located in Kilcawley West below the bookstore.

In accordance with University Procedure, if you have a documented disability and require accommodations to obtain equal access in this course, please contact the Office of Equal Opportunity and Disability Services at the beginning of the semester or when given an assignment for which an accommodation is required.

Collaboration: Ethical/Academic Standards

Academic Honesty
As outlined in The Student Code of Conduct, all forms of academic dishonesty are prohibited at Youngstown State. This includes plagiarism, the unauthorized use of tools or notes in taking tests or completing assignments, fabrication of data or information used for an assignment, working with others without permission from the instructor, and more. A student who is believed to have violated the academic integrity policy will meet with the instructor to discuss the allegations. The student may accept responsibility for the violation and any sanctions selected by the instructor, or they have the right to ask for a hearing before a hearing panel. The full Academic Integrity policy can be found in Article V of The Student Code of Conduct, while further information on University procedures for alleged academic integrity violations can be found in Article V.

Academic honesty is both expected and required. HELPING fellow students is acceptable, and is actually a very good way to learn the material. COPYING is NOT acceptable, laughably easy to detect, and will result in loss of credit for the assignment, and possibly failure of the course. Follow these guidelines:

• If you receive help with an assignment, then you must acknowledge that help in the documentation (your grade will not be affected unless otherwise announced).
• If you give help to another student, then it is your responsibility to make sure that they fully understand the problem and solution – just giving someone code is worse than no help at all.
• The bottom line: if you are not sure how to approach a problem, or are stuck at some point, PLEASE SEE ME FIRST FOR HELP.

Unless specified otherwise, all written exams are closed book (this includes notes, smartphones, etc.). Any suspected cheating on an exam will result in failure for the course.

I strongly encourage you to discuss any topic and/or share ideas with your peers. That's the way good science ought to happen. As a professional though, you should acknowledge any significant discussions in your homework/projects. However, when the time comes to write the homework, such discussions are no longer appropriate. The solution or program must be your own inspiration (although you may ask the instructor for help in writing or debugging). DO NOT COPY ANOTHER PERSON'S HOMEWORK UNDER ANY CIRCUMSTANCES. To do so is a clear violation of ethical/academic standards and will result in loss of credit for any assignment and possible course failure.

For further information, see the section on Academic Dishonesty in the *Undergraduate Bulletin*. See also the *CSIS Acceptable Use Policy for Lab Standards*.

Classroom Etiquette

Your fellow students deserve an environment without disruptions to learning. Examples include:

- Conversing during lecture
- Printing in labs during lectures
- Texting/social media
- Web surfing
- Cell phone use (please change ringtones to silent)
- Eating or drinking (prohibited in our labs)

If you engage in these activities repetitively, you will be kindly asked to leave.

On the other hand, asking questions during lecture is very strongly encouraged. If you are confused about a topic, chances are that many other people are as well! If I do not provide an opportune time for you to ask your question, feel free to interrupt me before I continue.

Incomplete Grades

Incomplete grades are strongly discouraged. However, an incomplete grade may be assigned under the following conditions:

- The student must request in writing that an incomplete grade be assigned.
- The student's previous work in the course must have been satisfactory.
- The reason(s) must be beyond the student's control, and deemed justifiable by the instructor.

Insufficient time is NOT a justification for an incomplete. Also note that all incompletes must be made up within two months; otherwise, they automatically revert to an F.

Coronavirus Safety Statement

As a consequence of the current coronavirus pandemic, students are expected to abide by all safety and health policies implemented by the University's Office of Environmental Occupational Health and Safety as well as all applicable local, state, and federal mandates. Currently, the City of Youngstown and the State of Ohio mandates a face covering/mask in public spaces. Consistent with federal, state and local guidelines, University Health Guidelines require that all individuals within campus buildings, including students, properly wear face coverings except when working alone within an enclosed area. Face coverings are in addition to maintaining appropriate social distancing when possible. Exceptions to wearing a face covering in a classroom or laboratory must be for justifiable reasons as approved by the Office of Disability Services (https://ysu.edu/center-for-student-progress/disability-services). Repeated violations of any coronavirus safety

and health policy shall be handled in accord with The Student Code of Conduct (https://ysu.edu/student-conduct/code-conduct).

Students are strongly encouraged to use the mobile YSU App (available on the Apple and Google app stores) to scan room QR codes to assist in contact tracing when physically attending class. If you have recently tested positive for COVID-19, have been around someone who has recently tested positive for COVID-19, or have symptoms of COVID-19, please complete the COVID-19 Outreach and Support Form found at https://ysu.edu/coronavirus-information. That site is the official University clearinghouse for COVID-19 information, policies, and procedures.

Common University Policies
Please see https://ysu.edu/institute-teaching-and-learning/syllabus-university-policies for current & updated required policy information.

The Instructor reserves the right to revise the above flexibly and with notice, based on their own discretion.