CSC 102 The Science of Computing II

Course Syllabus

Basic Information

Number of credits: 4
Term and year: Spring 2022
Instructor: Dr. Lorraine (Lori) Jacques
Office: EW 105
Contact Information: ljacques@ut.edu or on Discord
Office Hours: MWF 8:30-9:30, T 12:30-2:30
Time/location of class: MWF @ 10 in EW 112

Textbook

Jean Gourd. 2021. The Science of Computing. PDF provided to students on Blackboard.

Course Prerequisites

CSC 101 The Science of Computing I (with a grade of C or better)

Course Description

More in-depth coverage of computing. Topics include problem solving, algorithm analysis and development, object-oriented programming in Python, high-level data structures, computer organization and architecture, and various applications of computing.

Course Objectives and Outcomes

Upon successful completion of the course, each student will:

(1) Be able to write object- and non-object-oriented programs in a general-purpose programming language (e.g., Python);

(2) Understand more advanced concepts of the object-oriented paradigm (e.g., polymorphism, coupling, and cohesion);

(3) Have a basic understanding of randomness, probability, and pseudo-random number generators;

(4) Have a basic understanding of recursion and breaking problems down;

(5) Have a basic understanding of high level data structures (e.g., linked lists, stacks, queues, binary trees);

(6) Understand and use more advanced data structures and their applications (e.g., dictionaries, lists, sets);

(7) Be able to transform numbers from base two to bases ten and sixteen – and vice versa;

(8) Understand binary addition and multiplication, and signed, floating point number, and character representation in computers;

(9) Have a basic understanding of how a computer is made (e.g., ALU, CPU, memory, I/O);

(10) Have exposure to some applications of computing (e.g., graphical user interfaces, software engineering, artificial intelligence); and

(11) Work in groups on a significant computing project with a presentation.

Content Outline

(1) Graphical User Interfaces

(2) More on Objects

(3) Chaos

(4) Recursion

(5) High-Level Data Structures

(6) Number Systems and Binary Arithmetic

(7) Building a Computer

(8) A Selection from the following Applications of Computing:

(a) Computer Networks

(b) Cyber Security

(c) Artificial Intelligence

(d) Hard Problems

(e) Ethics and Impact of Computing

(f) Problem Solving with Computers

(g) Software Engineering

(h) Git: Managing Software Development

Assessments and Grading

Assessments for this course are listed in Table 1 below:

Assessment	Weight
Exams	40%
Activities	21.5%
Programs	21%
Final Project	15%
Attendance	2.5%

Table 1: Course Assessments

The grading scale fore this course is shown in Table 2 below:

Grade	Percentages
A	92% to 100%
AB	89% to 91%
B	82% to 88%
BC	79% to 81%
C	72% to 78%
CD	68% to 71%
D	60% to 67%
F	59% and below

Table 2: Grading Scale

Final Exam

The final exam for this course is a group presentation on May 4th @ 11.

Course Schedule

A tentative schedule is provided at the end of this document. Updates will be posted on Discord and Blackboard.

Instructor's and/or Department's Policies

Attendance is 2.5% of your grade. Excused absences, as defined by the university, do not count against your grade. Both excused and unexcused absences will be allowed to make up class work, however only excused absences will be allowed to make up exams. And no, there will not be a Zoom option for those who cannot make it to class.

All work is expected to be submitted on time. Late submissions will be accepted but will be subject to a 5% deduction for each calendar day it is late. No late work will be accepted after the last class before finals.

If you are having difficulties managing the work in this course, even if the reason has nothing to do with the course, it is expected that you will contact me ASAP so we can figure out what to do about it.

Course Policies

Syllabus Subject to Change

This syllabus is informational in nature and is not an express or implied contract. It is subject to change due to unforeseen circumstances, as a result of any circumstance outside the University's control, or as other needs arise. If, in the University's sole discretion, public health conditions or any other matter affecting the health, safety, upkeep or wellbeing of our campus community or operations requires the University to make any syllabus or course changes or move to remote teaching, alternative assignments may be provided so that the learning objectives for the course, as determined by the University, can still be met. The University does not guarantee that this syllabus will not change, nor does it guarantee specific in-person, on-campus classes, activities, opportunities, or services or any other particular format, timing, or location of education, classes, activities, or services.

Exposure to or Diagnosis of COVID-19

What to do if you have an exposure or diagnosis of COVID-19 or are unvaccinated and have had exposure to COVID-19

If you have been diagnosed with COVID off-campus, please confidentially report this to UT's local contact tracers Rapid-Trace, so they can confidentially notify anyone else who may have been exposed, provide you resources, work with you on isolation/quarantine guidelines, and arrange notification to your professors as needed. Remember that it will be up to you to communicate with your professors on how to make up coursework, as remote accommodations are no longer in place. Students can contact Rapid-Trace at (813) 699-3551. Rapid-Trace can be reached daily from 7 a.m.-9 p.m., with after-hours voicemail.

If you are diagnosed with COVID at the Dickey Health and Wellness Center - Rapid-Trace will contact you. If you have been exposed to someone with a positive COVID diagnosis, please contact Rapid-Trace for guidance.

Types of Close Contact that will be traced:

There are three types of contact that Rapid Trace contact tracers will look for when a case has been identified:

- Physical contact – touching without protection
- Close contact – within 6 ft. for 15 minutes or more

Please remember that these are general guidelines, and it is important to always follow UT's Spartan Shield directives for health and safety.

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If you are unvaccinated and feel you have been exposed to COVID and have not been contacted by Rapid Trace, please confidentially report the exposure to get assistance and guidance.

Title IX & Reporting Sexual Misconduct

Sexual misconduct, including, but not limited to acts of sexual harassment, nonconsensual sexual intercourse, nonconsensual sexual contact, dating violence, domestic violence, stalking, gender-based harassment or sexual exploitation are prohibited by Title IX, the Student Code of Conduct and other University policies.

The University strives to maintain a safe and nondiscriminatory campus community, and to do so, it is important for the Spartan community to report any safety concerns, such as acts of sexual misconduct. If you experience or witness any of these University prohibited actions, the University encourages reporting these matters, so that the University is able to take prompt action to stop, prevent and remedy the effects of the harassment. University resources and grievance procedure information will be provided to individuals who may seek services or redress.

There are many options to making a Title IX/Sexual Misconduct report. You may report this information through the University's online Title IX Report form[1]. The information will be forwarded and reviewed by the Title IX Coordinator or a Title IX Deputy Coordinator, who will contact you to provide further information on University grievance procedure options and resources that are available.

You may also make a direct report by contacting the University's Title IX Coordinator:

Kelsey San Antonio, Title IX Coordinator

Southard Family Building Suite #266

(KSanAntonio@ut.edu) (813)-257-3748

If you decide to discuss an incident with your course professor, it is important to note that they are considered a Responsible Employee and are obligated to report the information you share to the University's Title IX Coordinator[2].

If you are not ready to disclose or report this information to the University, you may disclose the information to a confidential party, such as a Victim Advocate, and/or a Counselor or Medical Clinician at the Student Health Center[3], to discuss any further options and resources available before deciding to report.

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[1]https://www.ut.edu/titleixreport

[2]There is an exception to this required reporting for preventative education programs and public awareness events or forums. For more information about exempt events, please contact the Title IX Office.

[3]A disclosure to a Dickey Health and Wellness Center Counselor or Medical clinician is only confidential when the disclosure is within the course of mental or medical health treatment and services.

- The Victim's Advocacy Hotline: (victimadvocacy@ut.edu) (813) 257-3900
- Counseling Center (counselingservices@ut.edu) (813) 253-6250
- Student Health - Medical Services (healthcenter@ut.edu) (813) 253-6250

For more information, see The University of Tampa's Title IX webpage[4] and the Student Code of Conduct webpage[5].

ADA Statement

Students accessibility services: If you require accommodations based on a disability and/or medical/mental health condition, please call (813) 257-5757 or e-mail accessibility.services@ut.edu for information on registering with Student Accessibility Services. You can also submit your request for accommodations and supporting documentation directly via an Accommodation Request. Please feel free to discuss this with me in private for more information.

If you encounter disability-related barriers accessing the online content for this course, please contact Sharon Austin, Academic Technology Accessibility Specialist, at saustin@ut.edu. If the initial access to the content cannot be resolved, the university will provide individuals with disabilities access to, and use of, information and data by an alternative means that meets the identified needs.

Campus Closure Statement

Course interruption due to adverse conditions: In case of any adverse condition or situation which could interrupt the schedule of classes, each student is asked to access UT Homepage[6] for information about the status of the campus and class meetings. In addition, please refer to UT Blackboard[7] for announcements and other important information. You are responsible for accessing this information.

Academic Integrity Statement

The University of Tampa is committed to the development of each student to become a productive and responsible citizen who embraces the values of honesty, trust, fairness, respect, and responsibility. Upholding academic integrity and promoting an ethical standard that does not condone academic misconduct is an important demonstration of these values and underpins how we live and learn in a community of inquiry. Students are expected to act ethically in the pursuit of their education and to avoid behaviors that run counter to participation in and demonstration of their learning. The Academic Integrity Policy[8] lists several common

[4]https://www.ut.edu/titleix
[5]https://www.ut.edu/studentconduct
[6]https://ut.edu
[7]https://utampa.okta.com
[8]https://ut.smartcatalogiq.com/en/current/catalog/Academic-Policies-and-Procedures/Academic-Integrity-Policy

types of violations related to cheating, unauthorized collaboration or assistance, plagiarism, and more. While the policy lists common violations and examples, it is not an exhaustive list and instructors may identify other types of conduct that impacts their ability to evaluate what has been learned substantively enough to constitute a violation of this policy. An instructor may impose a wide range of sanctions for academic integrity violations from completing a more difficult replacement assignment to an F in the course. Particularly severe violations or multiple violations throughout a student's academic career may result in suspension or expulsion from the University.

Attendance Policy and Excused Absences

The University of Tampa has a General Attendance Policy[9] in the Catalog. As stated, students are expected to attend class and academic programs and individual faculty may require specified levels of attendance for successful completion of a course. However, the University has identified specific types of absences as either excused or unexcused absences. Students should be aware of each type of absence and the impact on their ability to complete work that was missed during their absence.

Faculty must be notified of scheduled excused absences in advance in order for students to receive accommodation for work missed. The type of absence must fall within the categories specified in the catalog and the faculty member may determine how far in advance notification must be provided.

Certain types of unscheduled absences may also qualify as excused. Faculty may require documentation or verification. This would include isolation or quarantine due to COVID.

The policy requires faculty to accommodate excused absences, including graded work, in a fair manner. This is determined by the faculty member and is dependent on the structure of the course and what work was missed. This may include replacement of work with something equivalent or having the work excluded from the student's grade. Faculty are NOT required or expected to provide accommodation through remote access to the class or by providing a recording of the class session.

Faculty may determine that a student has missed too much participant-dependent work to successfully accomplish learning outcomes, even if the absences meet the criteria for excused absences.

Faculty are not required to allow a student to make up work missed due to unexcused absences.

Class Disruption Statement

Disruption policy: Every student has the right to a comfortable learning environment where the open and honest exchange of ideas may freely occur. Each student is expected to do his

[9]https://ut.smartcatalogiq.com/Current/catalog/Academic-Policies-and-Procedures/General-Attendance

or her part to ensure that the classroom (and anywhere else the class may meet) remains conducive to learning. This includes respectful and courteous treatment of all in the classroom. According to the terms of the University of Tampa Disruption Policy, the professor will take immediate action when inappropriate behavior occurs. Details of the policy may be found at Disruption of the Academic Process[10].

Face Coverings/Masks

To reduce their risk of becoming infected and potentially spreading it to others, the CDC recommends[11] everyone wear a mask in public indoor settings if they are in an area of substantial or high transmission regardless of vaccination status.

All UT community members and their guests are required to wear face masks while indoors on campus, regardless of vaccination status. Exceptions are permitted when eating, participating in athletic practices and contests, and instruction in selected fine arts. Residential students and their guests are to wear masks in public areas of residence halls but do not need to do so in private rooms. Detailed instructions on how best to navigate these activities will be provided by the respective areas, including Dining Services, Athletics, the Riseman Fitness and Recreation Center, Residence Life, and the College of Arts and Letters. In addition, instructors and podium presenters who are vaccinated and physically distanced may remove their masks for the duration of their presentation.

Students should bring a face mask supply when coming to campus. Health experts encourage surgical masks, KN95 masks or N95 masks (for health care workers), which offer additional protection.

Failure to wear a face mask will mean that one cannot enter a building nor attend class. It is considered disruptive behavior and will be treated in the classroom through our disruptive classroom behavior policy and outside the classroom through Student Conduct.

[10]http://ut.smartcatalogiq.com/en/current/catalog/Academic-Policies-and-Procedures/Disruption-of-the-Academic-Process

[11]https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html

Tentative Schedule

Class	Date	Topic	Notes
1	19-Jan	Git	
2	21-Jan	**Puzzle 1**	**Final project (FP) introduced**
3	24-Jan	GUIs	
4	26-Jan	GUIs	Program 1 assigned
5	28-Jan	Room 2	Room Adventure 2 assigned
6	31-Jan	Room 2	
7	2-Feb	More Objects	
8	4-Feb	More Objects	
9	7-Feb	More Objects	Program 1 DUE; Program 2 assigned
10	9-Feb	**FP part 2**	
11	11-Feb	**Puzzle 2**	
12	14-Feb	**Exam 1**	Room Adventure DUE
13	16-Feb	Chaos	
14	18-Feb	Chaos	
15	21-Feb	Recursion	Program 2 DUE; Program 3 assigned
16	23-Feb	Recursion	
17	25-Feb	Data structures	
18	28-Feb	Data structures	Program 3 DUE; Program 4 assigned
19	2-Mar	**Puzzle 3**	
20	4-Mar	**Exam 2**	
SPRING BREAK!!!			
21	14-Mar	Number systems	
22	16-Mar	Number systems	
23	18-Mar	**Binary adder**	Bring your R-Pi
24	21-Mar	**Binary adder**	Bring your R-Pi; Program 4 DUE
25	23-Mar	**Exam 3**	Program 5 assigned
26	25-Mar	**Final project prototype**	
27	28-Mar	**Simon**	Bring your R-Pi
28	30-Mar	**Simon**	Bring your R-Pi
29	1-Apr	Building a computer	Binary adder DUE
30	4-Apr	Building a computer	Program 5 DUE
31	6-Apr	Building a computer	
32	8-Apr	Building a computer	
33	11-Apr	Building a computer	Simon DUE
34	13-Apr	**Exam 4**	
35	15-Apr	**Final project prototype 2**	
36	18-Apr	**Paper Piano**	Bring your R-Pi
37	20-Apr	**Paper Piano**	Bring your R-Pi
38	22-Apr	Networks	
39	25-Apr	Security	
40	27-Apr	Software engineering	

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41	29-Apr	**FP: Wrap up**	Paper Piano DUE
42	2-May	**FP: Run-thru**	
FINAL	4-May	**Present Final Project!!! (11AM)**	

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