CS 151

CS 151 Introduction to Computer Science is taken by CS majors after CS 101 / ECT 130 or passing a placement exam.

This page contains the syllabus for CS 151 for the most recent offering (fall 2024).

Note that all sections of the course will use the same homeworks and lab assignments. Quizzes and exams may be slightly different.

Contents

General Information

Course website - https://cs.indstate.edu/wiki/index.php/CS_151

Your Instructor

Jeff Kinne (https://kinnejeff.com), jkinne@indstate.edu (http://mailto:jkinne@indstate.edu)
Office: Myers Technology Center (TC) 301D and in Microsoft Teams, phone 812-237-3394
Instructor Office Hours: MWF 10am-1pm, 2-3pm; TR 11am-12:30pm
Meeting: https://cs.indstate.edu/jkinne-meeting

Lecture, Exam

Lecture: MWF 9-9:50am in Myers Technology Center (TC) 317 or 307, over Zoom (link in Canvas, see below), and recorded
Mid-term exam: TBA
Final exam: Wednesday, Dec 11, 8-9:50pm

Prerequisites - B- or better in CS 101 or ECT 130 or departmental placement exam.

CRN numbers - 50535 for the face to face section, 51285 for the online section.

Required text We will use selections from the following free online sources.

- Automate the Boring Stuff with Python (available free at https://automatetheboringstuff.com/)
- Additional online sources as needed.
- turtle graphics (https://docs.google.com/presentation/d/1ccy6CXrdP9415bDEbzcI773cyDNl7p3rr3yA76QmgtQ/edit#slide=id.g877391eabf_0_116)

Class notes - Notes during class will mostly be kept in the documents in **this OneDrive folder (https://sycamoresindstate-my.sharepoint.com/:f:/g/personal/jeffrey_kinne_indstate_edu/EiJJbQVND3FMr25IAoHydnUBADrC7z-tZH_OTaD1h_A8Ow)**. Note that you will need to authenticate with your ISU account to view the folder. Some files from lecture may be kept at https://cs.indstate.edu/~cs151/ which can also be seen when you are logged into the terminal by doing: `cd ~cs151/public_html/`.

Announcements/Assignments/Quizzes

HW and Labs These are posted in Canvas and on the CS server. HWs are normally due 1 week after assigned. Labs are normally due the next class period after assigned (2 days after assigned). All times are Eastern US time.

Quizzes Rules for quizzes - you do all the work yourself, you do not communicate with another person or AI during the quiz, you can otherwise use the internet to search for information. Also, you should NOT take the quiz on the same computer as a classmate (this is considered cheating). You will normally get 2 attempts for the quiz, and the highest one will be taken. You can take the quiz any day/time before the due date/time.

Practice quizzes will be here - https://indstate.instructure.com/courses/12565/quizzes

Announcements Announcements will normally be posted to the course in Canvas.

Course Description and Content

Course Description

The official description of this course from the catalog is

"Core concepts that are foundational in computer science, including programming, use of computers for dealing with files and programs, how data is stored, number systems. Focus on building skills needed for programming and further study of computer science, and intermediate mastery of a particular programming language."

Course Outline

This course outline is subject to change. We will follow along with the other section of CS 151 but may add some additional topics.

Weeks 1-6

- Setup accounts
- Intro to Linux
- Variables
- I/O
- Flow Control
- If-statements
- Turtle
- Loops
- Exam 1

Weeks 7-14

- Functions
- Chapter 4 - Lists
- Chapter 5 - Collections
- Chapter 6 - Strings
- Bits, Bytes, Base and Logic
- Intro to algorithms
- Chapter 9 & 10 (Files)
- Exam2

Week 15-16

- Final project and interviews

Learning Outcomes

- Able to use Linux systems and terminal - managing files, running code, using utility programs.
- Basic mastery of core programming concepts - data types, conditionals and loops, Boolean logic, functions, string operations, reading and writing files. In particular,
- Can take a specification and produce code implementing it.
- Can take code and "play computer" to determine the precise results of running the code on a given input.
- Can take a partially complete program and specification for how it should work, and complete it.
- Can take a program with syntax or logical errors and fix the errors.
- Understanding of good coding style and able to practice good coding style - use of functions to avoid redundant code, whitespace formatting, variable and function names, comments.
- Understanding of base systems, including ability to convert between binary, hex, octal, and decimal.
- Understanding of and ability to explain different file types - text versus binary.
- Able to read and write data with programs, including parsing simple file formats (e.g., csv).
- Understanding of sorting algorithms - able to "play computer" to execute sorting algorithms that were covered in class on small test cases.

Course Policies, Grading

See <u>Jeff Kinne Course Policies</u> for course policies and how your overall letter grade will be determined.

Assignments

Start Assignments and Quiz Studying Early - I suggest attempting an assignment the day it is given, or the day after, so that if you have a problem you can ask early. If you continue to have problems in trying to complete the assignment, you will have time to ask again. Many of the assignments require thought and problem solving, which takes "time on the calendar" not just "time on the clock". By that I mean that spending an hour on 3 consecutive days is likely to be more productive than trying to spend 3 hours at once on the assignment.

Expected Amount of Work - If you take this class seriously and get what you should out of it, some weeks you will likely be spending around **6-10 hours or more** on the class. The students who get A's in their CS courses and have an easy time finding jobs do spend this much time on this course. Not everyone would need to spend this much time and not all weeks will be the same, but you should plan on putting in whatever time it takes. Note that the federal government definition of 1 credit hour as requiring 2 hours worth of time on the course for each credit hour of lecture, so you should think of this as the default for all of your courses.

Note - your classes should be more important than your part-time job.

Each week, you will normally have roughly 1 quiz, 1 lab assignment, and 1 hw assignment. hw assignments will be more involved/difficult than the lab assignments.

Checkpoint assignments – In CS 151, the first assignment (allAboutLinux) is a "checkpoint" assignment. This assignment must be completed and receive a 100% to pass the course. You must complete the first assignment by specified due date, and receive a 100% on the assignment. You may resubmit the assignment multiple times to try to receive 100%, but you must have 100% by the specified due date.

Why? There will be some key points where if you fall behind too much then there would not be much hope of passing. Key checkpoints are set to make sure you at least keep up the minimum amount needed.

Grade Meanings

The letter grades are intended to have the following rough meaning. The list of achievements needed for each was chosen with this in mind.

- A+/A: You understand everything and probably could teach the course yourself.
- B+/A-: You understand nearly everything, and should be all set to use this knowledge in other courses or in a job.
- C/C+/B-/B: Some things you understand very well and others you don't (more towards the former for a B and more towards the latter for a C).
- D-/D+/C-: You did put some effort in, and understand many things at a high level, but you haven't mastered the details well enough to be able to use this knowledge in the future.
- F: Normally, students that get an F simply stopped doing the required work at some point.

CS-Specific Items

This section contains items that are generally the same for all CS courses (and in particular those taught by this instructor).

Lab Help

See https://cs.indstate.edu/wiki/index.php/Unix_Lab_and_Help

Course Announcements

Announcements regarding the course will be made both during class and in Canvas. You should make sure your settings are such that you will be notified of these announcements (e.g., by email). You should regularly check your ISU email account or have it forwarded to an account that you check regularly. You can set the account to forward by logging into your indstate.edu email online (if you aren't able to find the option, try a different browser or search online for things like - outlook online forward email setting).

Classroom conduct

You may not use cell phones, iPods/music players, etc. during class. You should be civil and respectful to both the instructor and your classmates, and you should arrive to class a few minutes before the scheduled lecture so you are ready for lecture to begin on time. You may use your computer during class if you are using it to follow along with the examples that are being discussed. You should avoid spending time on email, Facebook, work on other courses, etc. during the lecture for this class (be fully present wherever you are, make the most of each experience).

Academic Integrity

See also Jeff Kinne Course Policies for additional information for more specifics about how I am handling these things for this course.

Please follow these guidelines to avoid problems with academic misconduct in this course:

Homework: You may discuss the homework assignments, but should solve and finish them on your own. To make sure you are not violating this, if you discuss with someone, you should DESTROY any work or evidence of the discussion, go your separate ways, SPEND at least an hour doing something completely unrelated to the assignment, and then you should be able to RECREATE the program/solution on your own, then turn that in. If you cannot recreate the solution on your own, then it is not your work, and you should not turn it in.

Note on sources: if you use some other source, the web or whatever, you better cite it! Not doing so is plagiarism. You should not be directly copy/pasting without prior approval; if you have approval you need to give a citation right at the point where it is used (i.e., in a comment).

Exams: This should be clear - no cheating during exams. Each instructor has different rules for what is allowed on exams in terms of notes, etc. If not noted otherwise, you should assume that a quiz or exam is closed notes, no computer, no calculator.

Projects: You should not copy from the Internet or anywhere else. The project should be your own work. It will be fairly obvious to me if you do copy code from the Internet, and the consequences will be at the least a 0 on the project. If cheating is observed, you will at the least receive a 0 for the assignment (and may receive an F for the course), and I will file a Notification of Academic Integrity Violation Report with Student Judicial Programs, as required by the university's policy on Academic Integrity. A student who is caught cheating twice (whether in a single course or different courses) is

likely to be brought before the All University Court hearing panel, which can impose sanctions up to and including suspension/expulsion. See http://www.indstate.edu/sjp/docs/code.pdf and http://www.indstate.edu/academicintegrity/ for more information.

Please ask the instructor if you have doubts about what is considered cheating in this course.

Office hours

You can contact me by email or Teams or come to my office during the hours I am normally there. If you want to be sure I am there you can sign up for an appointment. Note that I normally am available for online meetings MTWR 8-10pm as well. If you would like to meet in person you should reserve an appointment using http://cs.indstate.edu/jkinne-meeting to reserve an in person meeting with Jeff Kinne. I am normally in my office during my listed office hours, but by making an appointment you can be more certain.

Canvas

The course has a canvas site. Click https://indstate.instructure.com/ to go to canvas. You should see this course listed under your courses for the current term. If you don't you may need to click on the Courses icon and then click the "All courses" link. The canvas site is used for giving you your grades, for quizzes/exams, for getting to online lectures (which are done using Zoom), and for posting announcements. Links and such will be kept on this website.

Lectures (using Zoom)

Here at ISU section numbers starting with the number 3 (e.g.3xx: 301, 302, etc.) are generally online sections. There are 2 types of online sections, synchronous online and asynchronous online. Sections that are synchronous should be joined at the regularly scheduled time of the course, whereas sections that are asynchronous generally keep up with the material independently without regularly scheduled meetings. In general async sections are more difficult to stay on top of, and require a great deal of self-discipline (it is much easier to think "I can watch the videos tomorrow" and just get behind). So if you are in one of these sections make sure you get off to a strong start, and ask for help sooner rather than later. If you are in an online section, check your course schedule for course meeting times; if you have a meeting time, then your section is synchronous, otherwise it is asynchronous (or there is an error in the system).

For ISU's links to information on getting started with Zoom, see https://indstate.teamdynamix.com/TDClient/1851/Portal/KB/ArticleDet?ID=107534. You can also see the information linked at https://www.indstate.edu/services/student-success/cfss. You will get to the lectures for this course by going to Canvas, select this course, click Modules on the menu on the left, and click on the Zoom module. Once there you should see a schedule of lectures and be able to view recorded lectures. Note that you should install the Zoom application for your computer, and you will need to be logged into to Zoom with your ISU credentials to be able to connect. Also note that the lectures are recorded and only available to those in our class. Recorded lectures normally appear later the same day as the lecture.

Note that if you have not used Zoom with your ISU account previously, you need to go to https://indstate-edu.zoom.us and login with your ISU email address and password to get it setup.

Participating online

If you are participating online, please see the information at https://www.indstate.edu/services/student-success/cfss about participating in online courses. You are expected to either join lectures live through Zoom or watch the recordings once they are available. You will complete assignments, quizzes, and exams on the same schedule as the rest of the class.

For quizzes, I will try to find a time each week that works for everyone to take the quizzes at the same time. The mid-term will be scheduled when it gets closer.

For attendance when you are not in the room... If joining by zoom, you should post a comment in the chat to say if you have any questions about the current assignments, reading, the last lecture, etc. If watching the lecture later, you should watch it before the next lecture and send me a message by Teams or email saying if you have any questions or want any more examples about a particular topic. So, if not in the room, you should participate at least as much as "no questions from me right now".

ISU Required Syllabus Items

The items in this section are required and are the same for every ISU course.

Americans with Disabilities Act (ADA) Statement

Indiana State University recognizes that students with disabilities may have special needs that must be met to give them equal access to college programs and facilities. If you need course adaptations or accommodations because of a disability, please contact us as soon as possible in a confidential setting either after class or in my office. All conversations regarding your disability will be kept in strict confidence.

Indiana State's Accessibility & Advocacy Resources Office coordinates services for students with disabilities: documentation of a disability needs to be on file in that office before any accommodations can be provided. The Accessibility & Advocacy Resources Office is located at HMSU room 816. They can be contacted at 812-237-3829 or isu-aaro@indstate.edu. Appointments to discuss accommodations with the Accessibility Resources Office staff are encouraged.

Once a faculty member is notified by the Accessibility Resources Office that a student is qualified to receive academic accommodations, a faculty member is obligated to provide or allow a reasonable classroom accommodation under ADA.

Non-Discrimination, Harassment, and Sexual Misconduct

Standard ISU language required in all syllabi...

Indiana State University is committed to inclusive excellence. To further this goal, the university does not tolerate discrimination in its programs or activities on the basis of: race, color, national origin, gender, age, sexual orientation, gender identity or expression, disability, veteran status, or any other protected class. Title IX of the Educational Amendments of 1972 in particular prohibits discrimination based on sex in any educational institution that receives federal funding. This includes sexual violence, sexual misconduct, sexual harassment, dating violence, domestic violence, and stalking. If you witness or experience any form of the above discrimination, you are asked to report the incident immediately to Public Safety: 812-237-5555 or to The Office of Equal Opportunity & Title IX: 812-237-8954. With respect to sexual discrimination, instructors, faculty, and some staff are required by law and institutional policy to report what you share with them to The Office of Equal Opportunity & Title IX. You do, however, have the option of sharing your information with the following confidential resources on campus:

- Student Counseling Center: 812-237-3939; Gillum Hall, 2nd Floor

- Victim Advocate: 812-237-3849 or 812-243-7272 (cell); HMSU 8th Floor

For more information about discrimination and the support resources available to you visit the Office of Equal Opportunity and Title IX website. Please direct any questions or concerns to: Title IX Coordinator; 812-237-8954; Rankin Hall 426; ISU-equalopportunity-titleix@indstate.edu.

TimelyCare

The ISU dean of students asked faculty and staff spread the word about this, so I am including it here in the syllabus.

Attention all faculty and staff! Indiana State University is now partnered with TimelyCare (https://app.timelycare.com/auth/login) to deliver a new virtual health and well-being platform for students. This service is in addition to the in-person counseling services offered in the Student Counseling Center, 2nd floor Gillum Hall. The service provides 24/7 access to virtual care at no cost! Remind your students to take advantage of the TimelyCare services when they feel stressed or overwhelmed. We've included a slide that you can attach to emails, input in Canvas and present to students before and after class.

In addition to services for students, TimelyCare offers Faculty Support — a service for faculty and staff that is designed to equip you with information to help students who may be struggling. It's available 24/7/365 for free so you can get the guidance on how to support a student in need of care. Access Faculty Support by calling 833-4-TIMELY, ext. 2.

How can students access TimelyCare? Students can go to https://timelycare.com/indianastate or directly download the TimelyCare app from the app store to register with their school email address by clicking the "Get registered" link. It is important that our students all register in advance on the platform-- and this is where you can help us! Students can then start visits from any web-enabled device – smartphone, tablet, laptop, or desktop – anywhere in the United States.

Who can use TimelyCare? Any enrolled student.

What services are available? TalkNow - 24/7, on-demand emotional support. Scheduled Counseling - Select the day, time, and mental health provider of your choice. (6 visits per year). Self-Care Content - 24/7 access to self-care tools and resources, such as meditation and yoga sessions, helpful videos, and short articles from experts.

How much does a visit cost? TimelyCare services are available at no cost to students.

Getting Help

You are also strongly encouraged to take advantage of Indiana State's Writing Center. The Writing Center offers a variety of services designed to help students succeed in their classes and careers. The Writing Center is available to assist all registered ISU students with any area of reading or writing for any class. They can also help with personal projects like short stories or personal statements. They offer one-on-one consultations, drop-in services, and online appointments as well as group study tables. All services are free of charge. Students can make appointments by calling (812) 237-2989 or by using the link on the Writing Center website. Please prepare for your appointment by bringing your textbook, relevant notes and materials, and a printed copy of the writing you have attempted so far.

The Math Lab provides free tutoring for math students through on-campus and virtual meetings. By providing a judgement-free environment, students can build their confidence and view learning math as positive and rewarding. The Math Lab is located in Root Hall, room A009. The hours vary so be sure to check the Math Lab's website (https://www.ind

state.edu/cas/mathcs/math-tutoring-lab) to see when tutoring hours are available for your particular math course. If you have any questions, email ISU-MathLab@indstate.edu or call (812) 237-2130.

Commitment to Career Readiness

The administration, faculty, and staff at Indiana State University believe that in addition to educating students in academic content, it is important to prepare them to be professional and competent employees in the job market. We are committed to incorporating the eight career competencies outlined by the National Association of Colleges and Employers (NACE) as being necessary to success in the job search and workplace. Many of these eight career readiness competencies will be taught and integrated into your classroom learning:

Critical Thinking/Problem Solving, Oral/Written Communications, Teamwork/Collaboration, Digital Technology Application, Leadership, Professionalism/Work Ethic, Career Management, Global/Intercultural Fluency.

For additional assistance with your career development and preparation, please contact the Career Center (ISU-Career-Center@indstate.edu) or visit the Career Center's website (https://indianastate.edu/about/engagement/career-center).