CS-201 Computer Science I
Spring 2020 - Syllabus and Information

Contact Your Instructor

Instructor: *Luke May*

Email: *Luke.May@indstate.edu*

Office: Root Hall (RO), *A-138D* (ground floor, near west entrance, on north side of the hallway).

Course Website: http://cs.indstate.edu/~lmay1/courses/#/courses/cs201-2020sp/home

Mattermost Chat: https://judy.indstate.edu/

CS Server Instructor/Class Directories (cs.indstate.edu):
/u1/h5/lmay1
/u1/class/cs201

Lecture:
Class Section 001:

Tu	9:30am - 10:20pm	Root Hall (RO) A017
W	9:00am - 9:50am	Root Hall (RO) A017
Th	9:30am - 10:20am	Root Hall (RO) A017
F	9:00am - 9:50am	Root Hall (RO) A017

Final Exam:
ISU Spring 2020 Final Exam Schedule
Class Section 001:

W   05/06/2020   8:00am
(This course doesn't fit the above **Final Exam Schedule** link due to the 4-day/week meeting)

Instructor Office Hours (RO A-138D):
Tu/Th   12:30pm - 1:30pm
W/F   10:00am - 11:00am

The above are my official office hours. If those times will not work for you, you may contact me so we can set up an alternative time to meet.

Graduate Assistant (GA):
Name: Tyler Jenkins
Email: tjenkins13@sycamores.indstate.edu
Linux Lab Hours: Tu/Th   1:00pm - 3:00pm

Computer Resources:
CS Unix Lab: Root Hall (RO), *A-015* (basement, just west of west stairwell, first door on the left).
Graduate Assistant Tutoring: See http://cs.indstate.edu/info/labs.html

Prerequisites

A grade of C or better in CS-151.

CS-151 Key-Skills Review

https://cs.indstate.edu/wiki/index.php/CS_151_-_Key_Skills
Self Quiz: https://cs.indstate.edu/wiki/index.php/CS_151_-_Key_Skills_-_Quiz

Required Texts

None. The course website will link to any required reading.

Recommended Texts (not required)

Free Python e-books and resources:

> https://automatetheboringstuff.com/
> https://learnxinyminutes.com/docs/python3/
> http://greenteapress.com/thinkpython/html/index.html

Course Website

The majority of this course will be run through the course website linked at the top of this document. Bookmark this page. The course website contains announcements, a schedule of due dates, course assignments, lecture materials, and even links to exams and projects. You should check this site daily if possible, but twice a week at minimum to ensure that you do not miss an assignment.

Course Announcements

Announcements regarding the course will be posted under the *Announcements* section of the course website. Announcements may also be made during class (if applicable), via Mattermost Chat, or via your ISU sycamores email account. You should regularly check your email account or have it forwarded to an account that you check regularly. The *Announcements* section of the course website should be the most comprehensive list of any and all course activity, so check it regularly.

Classroom Conduct

You may not use cell phones, iPods/music players, etc. during class unless otherwise stated. If I can hear your headphones that means you are being disruptive, and if I have to ask you to turn down a device more than once, you may be asked to leave that day's lecture. 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 may not check social media or work on other courses, etc. during class. Do not consume or share any inappropriate material at any time. Be professional so that you may become a professional.

Ethics

The intentional or malicious use of systems, software, or application settings, to undermine another student's educational experience will not be tolerated and may warrant extreme academic consequences on par with plagiarism. Malicious tampering with user accounts, settings, or systems of students, instructors, or any other group or individual will be penalized similarly.

Mattermost Chat

The CS Department makes use of a collaboration tool called Mattermost that allows CS students to communicate with each other via chat messages. This software is an enterprise grade collaboration tool, and most organizations you encounter over the duration of your career will utilize something similar. It is a

requirement for this course to use this software. Mattermost chat is an extension of the classroom, so all of the above policies on classroom conduct apply. Be courteous and professional. If you break the the conduct policies, your Mattermost user can be removed from the system even though some assignments require its use. In that case, you will automatically forfeit those points, and, depending on the severity, you may be removed from the course with an F grade.

Course Information

Course Number: CS-201

Course Name: Computer Science I

Course CRN: 10937

Course Section: 001

Credit Hours: 4.0

Course Catalog Description:

This course begins with a history of programming languages, then focuses on programming in a particular language. The following topics are covered in some detail: variables, expressions and operators, control structures, simple data types, arrays, classes, and objects. Algorithm design and security issues are also discussed.

Course Outline

- Using Linux (refresher)
- Python 3 Language (review)
    - Basic Data types
    - Variables
    - Functions
    - Command Line I/O
    - File I/O
    - Lists
    - Dictionaries
    - Classes
    - Regular Expressions
    - Scripting
- Basic data structures - unsorted array, sorted array, linked list, heap, stack, queue, binary search tree.

    Can do *all* on paper, do code for *some* in class and as assignments.

Learning Outcomes
- Should be fluent in at least one GUI-based text editor.
- Should be able to create multi-file projects.
- Should be able to use code linters.
- Should be able to create and use a stack and a queue.
- Should be able to create and use linked list variations.
- Should be able to write and use sorting algorithms:

- Selection Sort
- Bubble Sort
- Insertion Sort
- Merge Sort
- Heap Sort (time permitting)
- Sould be able to construct Binary Trees using an array or with classes.
- Should be able to perform Binary Tree Traversals:
  - Breadth First
  - Depth First
    - Preorder
    - Inorder
    - Postorder
- Should understand and be able to effectively use real-world scripting concepts:
  - Hashbang and permissions
  - System arguments: option flags, key-value arguments, --version, --help, etc.
  - Standard input, standard output, and standard error (STDIN, STDOUT, STDERR)
  - File-system manipulation and search
  - Load and save configuration files
  - System PATH use and modification
  - Use of Shell *RC* (Run Commands) files like .bashrc, .bash_profile, .zshrc, etc.
- Should be able to explain and use recursion.
- Should be able to describe and use the basics of algorithm efficiency and Big-O notation.

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 ***4-8 hours/week*** 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 - your classes should be more important than your part-time job.

Grading and Assignments

The students of this course have the following responsibilities: read assigned readings before lecture, attend lecture, complete homework assignments, take in-class quizzes, take exams, and complete the final exam/project.

- **Assignments:** 40% of total grade

Homeworks, labs, and quizzes are equally weighted and averaged to calculate the *Assignments* portion of your grade. Your lowest score from this category will be dropped, which means if you have any unusual circumstances arise and cannot complete an assignment, then that assignment will be dropped. Do not waste your one dropped assignment; save it for when you need it. If there are more than 15 assignments, then the lowest 2 will be dropped.

- **Exams:** 30% of total grade

Exams are weighted equally and will be averaged to calculate the exam portion of your grade.

- **Attendance/Participation:** 15% of total grade

For all students, regular logins to the CS Server (minimum of 2 per week) will be a portion of this grade. For the on-campus classes, attendance will count as another portion of this grade. If you are not in class on time or for the duration of the class, you may not get credit for the attendance that day. For the online classes, some very small participation assignments will periodically be posted on the course website under *Online Participation* for you to complete to verify that you are following along with the content.

- **Final:** 15% of total grade

The final will likely be a final project (this will be announced as we get further into the semester). If it is a project, it will be assigned before or near the beginning of study week to give you plenty of time to complete it. It will be **due by 11:59pm on the Wednesday of finals week**

CS Course Policies

Note that this course follows all standard CS course policies. In particular check the CS course policies related to - cheating/plagiarism, attendance, missing exams. See http://cs.indstate.edu/info/policies.html for details.

Late Work

Late homeworks and labs will not be allowed to be turned in for credit, mainly because they will be used as a learning tool, and the answers will be given out shortly after the assignments are collected. If you do miss an assignment, I highly recommend you still attempt to complete it on your own because the material builds on itself. The assignment with the lowest percent value will be dropped from the grade calculation. If we have more than 15 total assignments then the 2 lowest scores will be dropped. Dropping an assignment grade allows you some leeway in case you have an emergency and cannot complete an assignment. Do not waste it. Showing effort on the assignments can often help you when I grade, so do not just skip them if you are confused. Contact me via email or chat if you need help. **If you begin to struggle or fall behind, contact me as soon as possible. Do not wait until the end of the semester; that will be far too late!**

Start Homeworks Early

We suggest attempting a homework 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 homework assignments require thought and problem solving, which takes "time on the calendar" not just "time on the clock". By that we mean that spending two hours on 3 consecutive days may be more productive than trying to spend 6 hours at once on the assignment.

Grade Cutoffs

We try to design homework assignments and exams so that a standard cutoff for grades will be close to what you deserve. After the first exam a grade will be created in Blackboard called "Letter Grade" that is what your letter grade would be if the semester ended today. Initially, I will likely assign the following grades: 93-100 A, 90-93 A-, 87-90 B+, 83-87 B, 80-83 B-, 77-80 C+, 73-77 C, 70-73 C-, 67-70 D+, 63-67 D, 60-63 D-, 0-60 F

Our goal is that the different grades have the following rough meaning.

A+/A
You can do *all* the assignments *on your own*.

B+/A-
You understand nearly everything, and should be all set to use this knowledge in other courses or in a job.

B-/B
Most things you understand very well and a few you might not (more towards the former for a B and more towards the latter for a C).

C/C+
Learned enough and have the minimum skills to move on in the subject.

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.

D-
Students will normally *not* get an F if - you attend 80% of the lectures, complete some of the assignments up through the end of the course, and get nearly half of the problems on the final exam correct.

F
Normally, students that get an F simply stopped doing the required work at some point.

Blackboard

The course has a blackboard site. Click here to go to blackboard. You should see this course listed under your courses for the current term. The blackboard site is only used for giving you your grades (go to the course in blackboard, then click "My Tools", and then "My Grades"). All course content, schedule, etc. is kept in this google doc (which you are currently viewing).

Academic Integrity

Follow the standard CS course policies in terms of what is and is not allowed on assignments:
http://cs.indstate.edu/info/policies.html

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

Special Needs / Student Disabilities
Standard language included in the syllabi for ISU courses.

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 University's Student Support Services (SSS) 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. Student Support Services is located on the lower level of Normal Hall in the Center for Student Success and can be contacted at 812-237-2700, or you can visit the ISU website under A-Z, Disability Student Services and submit a Contact Form. Appointments to discuss accommodations with SSS staff members are encouraged.

Once a faculty member is notified by Student Support Services that a student is qualified to receive academic accommodations, a faculty member is obligated to provide or allow a reasonable classroom accommodation under ADA.

Disclosures Regarding Sexual Misconduct

Standard language included in the syllabi for ISU courses.

Indiana State University fosters a campus free of sexual misconduct including sexual harassment, sexual violence, intimate partner violence, and stalking and/or any form of sex or gender discrimination. If you disclose a potential violation of the sexual misconduct policy I will need to notify the Title IX Coordinator. Students who have experienced sexual misconduct are encouraged to contact confidential resources listed below. To make a report or the Title IX Coordinator, visit the Equal Opportunity and Title IX website: http://www.indstate.edu/equalopportunity-titleix/titleix.

The ISU Student Counseling Center – HMSU 7th Floor | 812-237-3939 | www.indstate.edu/cns
The ISU Victim Advocate – Trista Gibbons, trista.gibbons@indstate.edu
HMSU 7th Floor | 812-237-3939 (office) | 812-230-3803 (cell)
Campus Ministries - United Campus Ministries | 812-232-0186
http://www2.indstate.edu/sao/campusinistries.htm
www.unitedcampusministries.org | ucmminister2@gmail.com
321 N 7th St., Terre Haute, IN 47807

For more information on your rights and available resources
http://www.indstate.edu/equalopportunity-titleix/titleix