Instructor: Sebnem Onsay
Office: Remote
E-Mail: onsayse@msu.edu
Office Hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>5:00pm-6:00pm</td>
</tr>
<tr>
<td>Tuesday</td>
<td>5:00pm-6:00pm</td>
</tr>
<tr>
<td>Wednesday</td>
<td>5:00pm-6:00pm</td>
</tr>
<tr>
<td>Thursday</td>
<td>5:00pm-6:00pm</td>
</tr>
</tbody>
</table>

All Office hours are held via Zoom.
Office Hours Zoom Info:
https://msu.zoom.us/j/93401691213

Meeting ID: 934 0169 1213
Passcode: 331OfficeH

Class Schedule:

Per MSU president’s update, this class will be in the following mode:
While the Zoom component continues, I will be in the lecture hall in following locations.
Students can continue joining live class using Zoom or by coming to classroom.
In either case students need to use their laptop with WIFI access throughout the lecture.

LIVE LECTURES ZOOM INFO:
https://msu.zoom.us/j/8751115036

Meeting ID: 875 111 5036
Passcode: 331S22

LIVE LECTURES CLASSROOM INFO:

CSE 331 Section 001: Tue, Th 10:20AM-11:40AM  Computer Center 402
CSE 331 Section 002: Tue, Th 12:40 PM-2:00PM  STEM building 1130
Prerequisites: Knowledge comparable to that taught in:
1. CSE 260 Discrete Structures in Computer Science
2. CSE 232 Introduction to Programming II

How is CSE 331 being taught this semester?
Flipped classroom technique is going to be used this semester to teach CSE 331. Meaning, students will go through that week’s lecture material, recording, prior to attending the live lecture on Zoom and in classroom. When students attend to their scheduled lecture in person or on Zoom, we will work on questions, coding problems...etc.

What does it mean?
1. Watch the videos, review lecture content before you attend each lecture.
2. Go over your check list and complete the listed activities on D2L.

How are the recorded lectures organized?
When you login to D2L you will see under Home, weekly modules are assigned. Each lecture contains series of videos. Complete the Zybooks activities prior to each lecture. Use D2L check list and calendar to be informed about your due dates.
For each day of class:
- Complete the Zybooks activities prior to live lecture session.
- Attend the class, watch the lecture videos.
  - You should be taking notes to refer to later! The videos will be broken up into smaller portions, so use the time before starting the next video to make sure your notes on the last section are complete.
  - Take pauses to pause and reflect on what you’re learning so far. How does this new concept relate to a past one? What doesn’t quite make sense about this yet?
- Join to Zoom class prepared with your notes from the lesson, ready to practice the concepts you saw with your peers.
- Participate, during the live lectures, feel free to use the raise hand option on Zoom, if not TAs will answer questions on Zoom on chat box, so please use the chat to ask questions when confused.
CSE 331-Onsay

- Reflect, now that you got some practice with the material for the day, it’s time to reflect on what you learned and you how you felt the day went. Maybe write down a closing section of your notes to summarize what you learned and leave notes to yourself about what you might need to study more.
  - In a few sentences, describe in your own words what you learned today.
  - Why did we learn this concept?
  - How does this concept relate to what we’ve learned previously?
  - What parts did you find tricky? Are there things you feel like you still need to work on more before you master the concept?

CSE 331 covers:

In this course, you will gain a strong theoretical and conceptual understanding of common data structures and algorithms, as well as how to apply them within larger programming projects. Specific topics we will cover include:

- **Asymptotic analysis, Algorithm Analysis, Recursion, and recurrence relations.**
- **Sorting** and divide-and-conquer.
- **Data structures and ADTs**: lists, stacks, queues, sets, dictionaries, linked lists, arrays, trees, balanced trees, AVL trees, Red Black Trees, Maps and Hash tables, Priority queues, binary heaps, and disjoint sets. Tries, Skip Lists, Huffman Coding.
- **Graphs and graph algorithms**: graph search, shortest path, and minimum spanning trees. A* Search, Theta* Search.

This course is also designed to have a practical component to help you gain basic familiarity with techniques used within industry. You’ll be asked to:

- Work on **programming projects** and integrate your work in an existing codebase.
- Learn how to use an IDE.
- Learn techniques for **checking correctness**: using our unit tests with PyCharm debugging, designing, and checking invariants, etc.

CSE 331 Course objectives:

Students completing this course are expected to be able to:

- Understand several significant algorithms
- Compare and select among fundamental data structures
- Apply general algorithms to practical problems
- Analysis algorithm complexity
- Study of common complexity classes
- Greedy Algorithms: Dijkstra's algorithm, Prim’s, Knuth’s algorithm, Minimum spanning trees
- Divide and conquer Dynamic programming
Required books for this class:
Zybooks. See information below. It is an e-book. You will need to subscribe to this e-book.

1. Using your MSU email, sign in or create an account at learn.zybooks.com
2. Enter ZyBooks code:
3. **MSUCSE331OnsaySpring2022**
4. Subscribe
5. A subscription is $58.

Are there any books used as a source of reference in this class?
Yes. There are plenty but you do not have to purchase them. Below are the top 2 books I use as a reference. Please note that these books are not required in any way, but they are highly recommended for future Computer Scientists, Computer and Electrical Engineers.

Data Structures and Algorithms in Python by Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser
Grade Assessment:

<table>
<thead>
<tr>
<th>Projects</th>
<th>44%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Class Activities and Participation (on D2L)</td>
<td>3%</td>
</tr>
<tr>
<td>ZyBooks Activities on Zybooks</td>
<td>3%</td>
</tr>
<tr>
<td>Exam1</td>
<td>≈16.67%</td>
</tr>
<tr>
<td>Exam2</td>
<td>≈16.67%</td>
</tr>
<tr>
<td>Exam3</td>
<td>≈16.67%</td>
</tr>
</tbody>
</table>

How to earn a non-zero grade in this course?

To be eligible to earn a non-zero grade in the course, a student must complete all the following:

1. Earn at least 50% of the total points available for Projects
2. Earn at least 50% of the total points available on Exams.

Grade Distribution:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage of Points Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>90%</td>
</tr>
<tr>
<td>3.5</td>
<td>85%</td>
</tr>
<tr>
<td>3.0</td>
<td>80%</td>
</tr>
<tr>
<td>2.5</td>
<td>75%</td>
</tr>
<tr>
<td>2.0</td>
<td>70%</td>
</tr>
<tr>
<td>1.5</td>
<td>65%</td>
</tr>
<tr>
<td>1.0</td>
<td>60%</td>
</tr>
</tbody>
</table>

The instructor reserves the right to adjust the scale for course grades, if necessary.
Exams:

There will be 3 examinations. Note that, CSE 331 does not have a final exam.

Exam Dates:

- Exam 1: February 17\textsuperscript{th} at 7:00pm EST
- Exam 2: March 24\textsuperscript{th} during your scheduled class time, in person
- Exam 3: April 28\textsuperscript{th} during your scheduled class time, in person

Course Requirements:

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Desire2Learn (D2L)
- Subscribe to zyBooks
- Access to Piazza
- Access to Mimir

If you do not have the necessary technology and/or equipment to adequately address the above requirements, the College of Engineering will make every attempt to assist you in obtaining access by loaning this technology for use during the semester. Please be aware that supplies are limited, and we may not be able to fulfill all requests.

If you need assistance securing technology (laptops, tablets, webcams, hotspots), please contact Theodore Caldwell, Assistant Dean for Equity, and Inclusion, by email at tc@msu.edu.

Projects:

- There will be several Project assignments offered. Each project focuses on using a particular data structure or a concept.
  
  - Students are given 1 week to work on each project.
  - For help on projects and class material
    - Use Piazza to post project questions.
    - Join our Help Hours.
    - Join Office Hours.
  - Please note that there will be project questions in Exams, so make sure you work on your project carefully and understand your own implementation.
All projects are due on Thursday evenings by 10:00pm.
All projects are submitted through Mimir.

Projects late submission policy:
- Any project is submitted after its due date is considered as late submission.
- The grade of any late work (will be subjected to the following penalty):
  - For every day after the due date, projects receive 25% percent less credit.

What About Cheating and Academic Integrity?

WELL DO NOT CHEAT TO BEGIN WITH!
Cheating in this class is to cheat yourselves from a good job!

All project assignments are to be completed individually. Verbally discussing the problem with other students is encouraged, but the discussion should not be turned into an implementation.

Students should not share a Project solution with another student. Simply showing your solution to another student almost guarantees a zero score: experience shows that a student who asks to "look at" your solution will copy parts of it or pass it along to someone else who copies it.

About getting inspiration from web sites: Your inspiration cannot exceed more than 10% of the project, in other words, you cannot copy paste the entire data structure functions, from a web site, site and except that to be grades as your own work. That is known as plagiarism. You are submitting someone else’s work to be graded.

Your projects will contain several functions for you to complete and submit, including the application problem. Students cannot copy solutions to multiple functions from a website and submit as their own work, that will be flagged as plagiarism. Students cannot use any outside inspiration for the application function at all. That would be also classified plagiarism. Violating any of these rules, even if the website is sited in the ReadMe document will be treated as Plagiarism.

The penalty for plagiarism on a Project is a mark of 0 on the Project in question and a further 5% is subtracted from your final grade. A student who cheats must receive a grade lower than a student who did not hand in a Project. Repeat offenses will result with a 0 from this class.
What about using Chegg and Similar Sites?
I as an instructor opt-in to our department policy.
https://www.cse.msu.edu/Students/Current_Undergrad/Chegg/

Chegg and Similar Sites Policy

Department of Computer Science and Engineering
Michigan State University

The undersigned instructors and courses in the Department of Computer Science and Engineering have adopted the policy that submission of student work (e.g., assignments and/or exam solutions) based on those found on Chegg, Brainly, Quizlet, and other similar websites will result in an Academic Dishonesty Report (ADR) and an automatic failing grade of zero (0.0) for the course. The ADR for students personally posting questions from assignments or exams to these sites will request additional sanctions.

Chegg and similar sites have, wittingly or unwittingly, industrialized cheating in Computer Science courses. They provide a mechanism whereby students can pay for a solution to assigned work. Students who do not do their own work negatively impact the quality of the course and our academic programs, cheapening the value of a degree from Michigan State University. Sadly, it has become all too common that students will look to Chegg and other websites for answers rather than doing their own work. In recent history, larger numbers of students are choosing this shortcut.

Computer Science courses utilize programs such as Measure of Software Similarity (MOSS) to compare student submissions to each other and to submissions found online on sites such as Chegg. These programs are designed to work even when programs have been modified to attempt to mask their origin, so using a solution from these sites will almost certainly be caught and the students involved will receive a zero in the course per this policy.

Do not seek solutions to programming assignments online. Visiting sites such as Chegg risks an automatic failing grade in a course. And certainly, do not post assignments on those sites. It’s fundamentally dishonest and the temptation to use the solution puts other students at risk.

If you have questions about this policy, or what does and doesn't constitute academic dishonesty in a course, please consult Onsay and the associate chair Dr.Owen.
Academic Integrity: Article 2.3.3 of the Academic Freedom Report states: The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards. In addition, CSE adheres to the policies on academic honesty specified in General Student Regulation 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site.) Unless I explicitly state otherwise, I expect all solutions to Homework assignments, programming assignments, and exams will be solely your own work. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Students who violate MSU rules may receive a penalty grade, including but not limited to a failing grade on the assignment or in the course.

Take the Spartan Code of Honor:
“As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.”

If using online revision control systems such as github.com, ensure your code is not publicly accessible. Failing to do so allows someone to easily copy your code, putting yourself at risk.

Depending on the severity of the incident, repercussions for academic dishonesty include failing the assignment, final grade reductions, and/or failing the course.

- You can learn more by following this link. (https://ombud.msu.edu/), which has resources regarding academic integrity among other topics

D2L:

This course will be delivered COS through the course management system, and you will need your MSU NetID to login to the course from the D2L homepage (http://d2l.msu.edu).

In D2L, you will access online lessons, course materials, and additional resources.

Course Web Site and Communication
Information related to the course is available on https://d2l.msu.edu
We will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

D2L Technical Assistance
If you need technical assistance at any time during the course or to report a problem, you can:
- Visit the Distance Learning Services Support Site
CSE 331-Onsay

- Visit the Desire2Learn Help Site (http://help.d2l.msu.edu/)
- Or call Distance Learning Services: (800) 500-1554 or (517) 355-2345

Resource Persons with Disabilities (RCPD)
- To make an appointment with a specialist, contact: (517) 353-9642
- Web site for RCPD: http://MYProfile.rcpd.msu.edu

Class Recordings
Each class session of this course will be recorded. The recordings will be available to students registered for this class. This is intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments. Doing so may result in disciplinary action. If the instructor or another University office plan other uses for the recordings beyond this class, students identifiable in the recordings will be notified to request consent prior to such use.

Contingency Planning
- In the case of connectivity issues particularly during exams, please contact me onsayse@msu.edu

Piazza: Using your MSU email only, enroll into Piazza.

What is the Piazza Etiquette?
Piazza is a tool for students to post Project, Lecture material questions only. It is a communication tool to help students with their assignment questions. Piazza neither can be used as a venting tool to express frustrations toward the class material, topics, nor can be used as a tool to change the students’ perception towards the TAs and the instructor of this class. Students evaluate this class at the end of the semester, feel free to share your thoughts at the end of the semester. Those who do not follow this simple etiquette will be blocked from piazza for the rest of the semester and will be reported to the Dean of Students.

IDE use:
JetBrains PyCharm IDE is used for projects to benefit from the debugging tool, all labs are equipped with PyCharm. It is a free product if you register with your MSU email.
You can install PyCharm on your personal machine by visiting:  
https://www.jetbrains.com/pycharm/
More instructions are provided on D2L.

**In-class activities:**

There will be questions/answers, coding activities during the live lecture. Students can miss a total of 4 In Class Activity without affecting their grade.

**ZYBOOKS Activities:**

Zybooks activities are assigned on Zybooks page. Check your Assignments on Zybooks each time you log in. Completed activities are submitted through ZyBooks.

- Follow your due dates on D2L calendar carefully and mark your calendars.
- 2 lowest scored activities will be dropped at the end of the semester.

**Help Rooms:**

We will have help rooms offered Sunday, Monday, Tuesday, Wednesday, Thursday 6:00pm-8:00pm. Wednesday and Thursday help rooms now have in person component, please go to EB 1130 for in person help room on these days.

Help Rooms Zoom info:
https://msu.zoom.us/j/91072743298  
Password: 331S22

**Inform Your Instructor of Any Accommodations Needed**

Michigan State University is committed to providing equal opportunity for participation in all programs, services, and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation (“VISA”) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date will be honored whenever possible.

**What are the Drops and Adds- Important Dates?**

- **Class Begins**  
  1/10/2022
- **Open adds end (8:00pm)**  
  1/14/2022
- **Last day to drop with refund (8:00pm)**  
  2/4/202
- **Class Ends**  
  4/29/2022
CSE 331-Onsay

You should immediately make a copy of your amended schedule to verify that you have added or dropped this course.

Other Policies:
Any extenuating circumstances that impact on your participation in the course should be discussed with your instructor as soon as those circumstances are known (such as absences due to illness, religious observances, or other required school activities).
All students are expected to be responsible users of the computer system provided for this course.

Face Coverings

Appropriate face coverings must be properly worn – covering both mouth and nose – by everyone (including all faculty, staff, students, vendors, and visitors) while on property owned or governed by MSU and while participating in any indoor MSU-related or MSU-sponsored activities. If someone has a medical condition that prevents them from safely wearing a face covering, they should contact MSU’s Resource Center for Persons with Disabilities (RCPD) to begin the accommodation process. They must receive documents attesting to their exemption from the mask mandate before entering an MSU building without a mask.

The university has put in place a mask mandate and students are required to wear properly fitting masks during indoor class meetings. Students should refrain from eating or drinking during class to avoid having to remove their masks. If students do consume food or drinks inside, they should remove the mask only to take a sip of beverage or a bite to eat, and they must replace the mask properly between each bite and sip.

If we encounter a student not wearing a proper face covering during class or in person Help Rooms, per Dean Kempel’s instructions, below is how we will address the situation using the following progressive steps:

1. We will remind the entire class of the mask requirement and request that everyone comply. There will be signs in classrooms describing the mask mandate to which instructors can refer.
2. We will directly request a non-compliant student to either comply with the mask requirement or leave the building. If a student has forgotten their mask, they should be allowed to leave to go get one. Please note that a students’ refusal to wear a mask warrants a referral for disciplinary action.
3. If a direct request to comply with the mask mandate is ignored, the TA(s) will inform the class that the entire class will be dismissed for the day unless everyone follows the mask mandate.
4. If a non-compliant student refuses to wear a mask or leave the classroom, class should be dismissed. In these situations, I will notify my department chair and work with the college to ensure appropriate measures are taken to help ensure that the next class meeting can be held safely.
5. Should an emergency develop that you feel cannot be resolved by classroom dismissal, the TA(s) or the instructor will call 911 for assistance just as they would with any other emergency.

If there is an incident related to properly worn face coverings in class, instructors should immediately file a report with their academic unit’s leader (e.g., department head, director of academic affairs, or director) that includes a written record of the facts.

_This syllabus is subject to change at any time during the semester._
_The changes made in this document will be shared with students._