Course Information:
- Instructor: Dr. Cong Pu, Ph.D.
- Office: 216 MSCS
- Office phone: 405-744-6036
- Email: cong.pu@okstate.edu
- Course format: Traditional
- Course meetings: M/W, 2:30 PM - 3:45 PM, Stillwater Campus | Classroom Building 203
- Teaching assistants:
  - Name: Raghu Medarametla
  - Email: raghu.medarametla@okstate.edu
  - Office hours / location: TBA
  - Name: Divya Sravani Bandi
  - Email: divya_sravani.bandi@okstate.edu
  - Office hours / location: TBA
- Office hours:
  - Tentative office hours: M/W, 1:30 PM - 2:30 PM or by appointment through email.
  - We can always meet during office hours; no appointment is required. Outside office hours, please send the instructor an email for appointment first.
- Course web page: Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/). It is important to visit Canvas regularly for up-to-date course information.
  - Lecture slides, source code, and other relevant materials are uploaded to Canvas before each class.
  - If you do not see lecture slides, source code, and other relevant materials on Canvas before the class, please send an email to remind the instructor.

Course Description: From Catalog
- Storage, structures, data and information structures, list processing, trees and tree processing, graphs and graph processing, searching, and sorting. (PR: CS 2133, CS 3653)

Course Objectives (CO): Students who have completed this course should have:

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>How students will practice each outcome in this course</th>
<th>How student achievement of each outcome will be assessed in this course</th>
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</table>
| CO-1: Understand basic data structures and abstract data types including stacks, queues, lists, sets, maps and graphs. | • Lecture  
• Examples  
• In-class exercise/discussion | • Review Quiz  
• Assignment  
• Exam |
| CO-2: Use recursion as a powerful problem solving technique in design and development of data structures and understand when it is not appropriate to use. | • Lecture  
• Examples  
• In-class exercise/discussion | • Review Quiz  
• Assignment  
• Exam |
CO-3: Gain an appreciation of the variety, theoretical nature, and practical uses of data structures.

- Lecture
- Examples
- In-class exercise/discussion

CO-4: Analyze the efficiency of data structures and select the most appropriate data structure for applications.

- Lecture
- Examples
- In-class exercise/discussion

CO-5: Build data structures and use them as building blocks to form more complex and advanced data structures in a hierarchical manner.

- Lecture
- Examples
- In-class exercise/discussion

Preferred Communication Method and Expected Response Time:
- You can always meet with the instructor during office hours, no appointment is required.
- Outside office hours, please send the instructor an email for appointment first.
- When you send an email to the instructor, please use OSU email account, and use the subject line and include a course number, e.g., CS3353.
- You can generally expect an email response within 6 hours. If you do not get a response within 6 hours, please forward the previous email to the instructor.
- You can generally expect feedback on assignments, review quizzes, exams in two weeks after submission. If you do not receive feedback in three weeks, please send an email to the instructor.

Required Textbooks, Additional Reading, and Other Materials:
- Important concepts/materials will be included in the lecture notes from various sources, and posted on Canvas https://canvas.okstate.edu/.

Course Requirements and Grading Policy:
- **1st Exam:** 15%, Feb 19 (Monday), 2:30 p.m. - 3:45 p.m., Stillwater Campus | Classroom Building 203
- **2nd Exam:** 15%, Apr 1 (Monday), 2:30 p.m. - 3:45 p.m., Stillwater Campus | Classroom Building 203
- **3rd Exam:** 15%, May 6 (Monday), 2:00 p.m. – 3:50 p.m., Stillwater Campus | Classroom Building 203
  - All exams (non-cumulative) are paper-based exams.
  - All exams should be taken in the classroom (Stillwater Campus | Classroom Building 203). However, students can start the exam whenever they want during the exam time. The exam paper should be submitted by the end of exam time.
  - Students are allowed to bring notes on one piece of double-sided A4 paper.
    - Other resources and Internet are NOT allowed.
  - There will be NO make-up for missing exam. Only university excused absences with appropriate and official DOCUMENTATION will be accepted for make-up exam.
- The make-up exam must be taken within two days after the scheduled exam.
  - If students take a conflict exam, they must talk to the instructor and provide a valid document at least two weeks before the scheduled exam.
- The conflict exam must be taken within two days after the scheduled exam.

**Assignment: 55%**
- Assignment should be SUBMITTED on Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/) before Due Date. Other submission methods (i.e., email) will NOT be accepted.
- LATE Submission will NOT Be Accepted on Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/) since the submission link will be closed automatically after due date.
  - 1 minute late and 1 hour late are treated the same: late submission.
- There will be NO re-submission for missing assignment. Only university excused absences with appropriate and official DOCUMENTATION (covering half of assignment time) will be accepted for assignment re-submission.
- Each student has unlimited submission attempts on Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/) before due date. However, the TA only grades the last submission attempt.
- There will be NO re-submission if the student submitted the wrong assignment. So, please verify the uploaded assignment after the submission.

**Review Quiz: 5% (Bonus)**
- Review quiz will NOT be announced in advance, so attendance is highly REQUIRED.
- There will be NO make-up for missing review quiz due to absence, lateness, etc.. Only university excused absences with appropriate and official DOCUMENTATION will be accepted for make-up review quiz.

**Plagiarism:**
- Plagiarism or cheating will not be tolerated in the class.
  - 1st plagiarism will result in zero point in the suspected work.
  - 2nd plagiarism will result in immediate dismissal (F grade).
- Students may access and use generative AI tools, such as ChatGPT, Bing AI, or Bard, to assist them in their learning of the course content. Appropriate uses may include generating ideas for writing assignments, checking facts of a phenomenon, and assessing a paper for grammatical errors that are written by the student. Such uses of the tool assist students in learning the content and will therefore be permitted. However, students are prohibited from using generative AI tools to completely produce, reproduce, and/or manufacture paper and/or other assignments without using any personal effort devoted to the learning process. Before using generative AI tools, students should check to ensure they do not conflict with copyright laws or other’s proprietary information.

**All grades will be posted on Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/):**
- Students are highly suggested to check the grade on Canvas [https://canvas.okstate.edu/](https://canvas.okstate.edu/) frequently and notify instructor immediately if there is any grading error.
  - The student is required to communicate with the TA (not the instructor) for any grading error.
- Mid-term grade will be posted by Friday, April 12, 2024.
  - Friday, April 12, 2024, last day to drop an individual course.
Spring 2024 calendar: https://registrar.okstate.edu/academic_calendar/

- **Grade Scale:**
  - Actual points received in each category should be converted into category percentage. For example, if you got 40/50 for 5 assignments, the percentage of assignment category will be \(\frac{40}{50} \times 55\% = 44\%\).
  - A (100 - 90), B (89 - 80), C (79 - 70), D (69 - 60), and F (59 - 0)

- **Excuses**
  - Because there is a degree of flexibility in completing items, it is the student’s responsibility to keep track of dates and find enough time for completion. If the students wait until the last minute, there is no one to blame but the students themselves. With that said, the instructor is also not heartless. If there is something that occurs which prevents student’s access to the course for a significant length of time (e.g., serious illness, death in the family, or personal tragedy), the student needs to contact the instructor as soon as possible and they may be able to work something out. If the student chooses to wait until the end of semester to contact the instructor for excuses and accommodation, there is nothing the instructor can do.

**Attendance Policy:**

- The instructor chooses not to take attendance. However, students are expected to attend all class meetings punctually to receive the bonus points of review quizzes, from the beginning until the end of the semester.

- If a student misses a class without university excused absence documentation, the student should not expect individualized instruction on what was missed. This will be effective from the beginning of semester.

**Civility in the Classroom Statement:**

- Oklahoma State University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom. Further, the classroom is a setting in which an exchange of ideas and creative thinking should be encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or behavior will be subject to appropriate sanctions according to university policy. Likewise, faculty members are expected to maintain the highest standards of professionalism in all interactions with all constituents of the university.
  - To ensure that you are fully engaged in class discussions during class time, you are expected to do the following:
    - Maintain the level of civility and professionalism expected in a face-to-face classroom setting.
    - Refrain from engaging in non-class related activities during class time that creates a distraction for other students in the class and/or limit your ability to engage in the course.

- Failure to meet these expectations may result in the following consequences:
  - Being counted as absent for the class meeting.
  - Not receiving credit for class participation for that class period.
Other consequences as stipulated in the syllabus, Oklahoma State University The Student Code of Conduct, or other university policy.

Student with Disabilities:

- Any student who is registered with Student Accessibility Services (SAS) office and may require special arrangements/accommodations in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements/accommodations. Students should present appropriate verification from Student Accessibility Services https://accessibility.okstate.edu/ during the instructor’s office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Accessibility Services has been provided. For additional information, you may contact the Student Accessibility Services office in 155 UHS or 405-744-7116 / accessibility@okstate.edu.

Academic Integrity Statement:

- Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript, and being suspended or dismissed from the University. Oklahoma State University’s Academic Integrity policy identifies behaviors that violate the fundamental values of academic integrity. Please refer to https://academicaffairs.okstate.edu/academic-integrity/academic-integrity.html for more information.

Discrimination, Harassment, and Sexual Violence Statement:

- Oklahoma State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other Title IX violations are not tolerated by the University. Report any incidents to the Office of Equal Opportunity Services, 405.744.1156 or file a report online at https://hr.okstate.edu/equal-opportunity/title-ix-process.html.

LGBTQIA Support Statement:

- I identify as an ally to the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community, and I am available to listen and support you in an affirming manner. I can assist in connecting you with resources on campus to address problems you may face pertaining to sexual orientation and/or gender identity that could interfere with your success at Oklahoma State University. Additional resources are available through the Division of Institutional Diversity, https://diversity.okstate.edu/departments/equal/resources.html.
Additional Information:

- The instructor views the syllabus as a contractual agreement between the instructor and students, which means the instructor will completely follow the syllabus while advising, teaching, testing, and evaluating students in this course.
  - The instructor reserves the right to propose changes to the syllabus as deemed necessary / with reasonable reasons.
    - However, any change will be announced as early as possible in the classroom, and the change will be made if the majority of students who attend the class approve the change via voting.
- The syllabus lets students know what the course is about, why the course is taught, where it is going, and what will be required for them to be successful in the course.

Course Schedule and Important Dates: Topics and/or dates may be changed during the semester at the instructor’s discretion because of scheduling issues, developments in the discipline, or other contingencies. If there is any change, students will be notified immediately.

- **Jan 15:** University Holiday (No Class)
- Jan 17: Welcome & Syllabus & Course Introduction
- Jan 22: Complexity Analysis
  - Release Assignment 1: Algorithm Analysis
- Jan 24: Linked List
- Jan 29: Linked List
- Jan 31: Linked List
  - Assignment 1 Due
- Feb 5: Linked List
- Feb 7: Linked List / Stacks and Queues
  - Release Assignment 2: Linked List
- Feb 12: Stacks and Queues
- Feb 14: Stacks and Queues / 1st Exam Review
- **Feb 19:** 1st Exam
- Feb 21: 1st Exam Discussion
  - Assignment 2 Due
  - Release Assignment 3: Stacks and Queues
- Feb 26: Recursion
- Feb 28: Recursion
- Mar 4: Binary Trees
  - Assignment 3 Due
  - Release Assignment 4: Recursion
- Mar 6: Binary Trees
- Mar 11: Binary Trees
- Mar 13: Binary Trees
- **Mar 18:** Students’ Spring Break (No Class)
- Mar 20: Students’ Spring Break (No Class)
- Mar 25: Multiway Trees
  - Assignment 4 Due
- Mar 27: 2nd Exam Review
- Apr 1: 2nd Exam
- Apr 3: 2nd Exam Discussion
  - Release Assignment 5: Binary Trees
- Apr 8: Graphs
- Apr 10: Graphs
- Apr 15: Graphs
- Apr 17: Graphs
  - Assignment 5 Due
  - Release Assignment 6: Graphs + Bonus Question(s)
- Apr 22: Sorting
- Apr 24: Sorting
- Apr 29: Hashing
- May 1: 3rd Exam Review
  - Assignment 6 Due
- May 6: 3rd Exam, 2:00 p.m. – 3:50 p.m.