

INSTRUCTOR INFORMATION

Dr. Jie Hu Meichsner

Department of Computing, Informatics, and Data Science

Office: CH366U

Email: jhu@stcloudstate.edu

Course Page: <http://huskynet.stcloudstate.edu/instructional/d2l/default.asp>

In case of an emergency, please contact

College of Science and Engineering: 320-308-2192

CLASS MEETING INFORMATION

Tuesday and Thursday: 9:30 ~ 10:45 am, CH9

Zoom access:

<https://minnstate.zoom.us/j/94402153679>

Passcode: 30154

Wednesday: 10:00 am ~ 10:50 am, CH9

Zoom access:

<https://minnstate.zoom.us/j/98128857642>

Passcode: 30154

OFFICE HOURS

Tuesday, Wednesday and Thursday: 11:00 am ~ 2:00 pm

Zoom access:

<https://minnstate.zoom.us/j/92892563442>

Passcode: 301441338

Tuesday: 3:20 ~ 4:20 pm

Zoom access:

<https://minnstate.zoom.us/j/92826425623>

Passcode: 301441338

TA INFORMATION AND OFFICE HOURS

See D2L course page

REQUIRED TEXTBOOK:

Secure Data Structures and Algorithms with C++ 8th Edition, Walls and Mirrors

Print ISBN 9780138122737, 0138122733

eText ISBN 9780138122782, 0138122784

COURSE DESCRIPTION:

CSCI 301 continues the introduction to computer science begun in CSCI 201. In this course, we will manipulate more complex data structures and continue to program in C++. The structures to be studied include recursion and recurrence, trees, binary trees, 2/3 trees, directed and undirected graphs, searching and sorting, program layering.

PREREQUISITE:

1. CSCI 201, grade C- or above required
and

2. One of these two

MATH 113 - Trigonometry (Minimum grade: 1.67 GPA Equivalent)

MATH 115 – Precalculus (Minimum grade: 1.67 GPA Equivalent)

****If you have not had ALL of these courses you should drop this course until you have passed all of the prerequisites. We do not have time for an extensive recapitulation of topics covered in the prerequisite courses.**

STUDENT LEARNING OUTCOMES

1. Write C++ class templates with interface separated from implementations and class relationships for code reuse.
2. Use linear data structures such as linked list, stacks, queues and priority queues to the development of algorithms in solving problems.
3. Use nonlinear data structures such as binary and binary search trees, 2/3 trees, directed and undirected graphs to the development of algorithms in solving problems.
4. Use recursive definitions and Big-O notation as analysis tools in solving complex problems.
5. Use complicated sorting techniques in programs based on their efficiencies.
6. Write design documents, testing directions, and user manuals for moderately-complicated programs.

Topics:

The main topics covered in this class:

Topics	Readings
C++ Classes, Introduction to ADTs and the Bag	C++ Interlude 1 & 6, Chapters 1 & 2
Implementing an ADT with an Array	Chapter 3
Implementing an ADT with a Linked-Chain	Chapter 4, C++ Interlude 2
Recursion	Chapters 5 & 6
Algorithm Efficiency & Stacks	Chapters 7, 8, 9
Queues & Deques	Chapters 10 & 11, C++ Interlude 3
Lists	Chapters 12 & 13
Sorting	Chapter 15
Sorted Lists & Inheritance	Chapter 16, C++ Interlude 5
Trees	Chapters 17 & 18
Binary Search Trees	Chapters 19 & 20
Heaps and Priority Queues	Chapters 21 & 22
Graphs	Chapters 27 & 28

CLASS ACCOUNTS:

All work for this class must be done on **GitHub** using your account.

PROGRAMMING PROJECTS AND ACADEMIC HONESTY:

You will be expected to complete programming projects on your own outside of class time. **The programs are due by 11:59 pm CT on the due date. Work handed in late will receive reduced credit. No allowance will be made for computer down time, so plan ahead.**

You are expected to do these on your own. If you copy someone else's work or allow someone else to copy your work, you are cheating. This will result in a grade of zero on the work in question or test, possibly an F in the course, and possibly other disciplinary actions. Plagiarism and cheating are serious violations of St. Cloud State University's policy and will not be tolerated.

AI POLICY

While Artificial Intelligence (AI) is a tool available to the public, within this course, you are expected to submit assignments and discussions that are your original thought. If an assignment is suspected of being AI-generated, there will be additional conversations between the faculty and student, similar to our plagiarism practices. Please refer to the Academic Integrity policies that apply to all courses within our institution.

LATE ASSIGNMENT SUBMISSION POLICY:

- 1 day late submission will incur 10% deduction of points earned.
- 2 days late submission will incur 25% deduction of points earned.
- 3 days late submission will incur 50% deduction of points earned.
- 4 days late submission will incur 75% deduction of points earned.
- 5 days late submission will incur 0 point.

****Saturday and Sunday will be considered as 1 day late.**

EXAMS:

There are three exams scheduled as below:

- **Test1: 9:30 am ~ 10:45 am, October 2, Thursday**
- **Test2: 9:30 am ~ 10:45 am, November 6, Thursday**
- **Final exam: 9:55 am to 12:10 pm, December 11, Thursday**

****Since all these exams have been scheduled, no make-up exams will be given unless you have an emergency or illness. In any of these cases you must contact me as soon as possible, and provide a document to support your cases.**

You will take these exams online through D2L using **Respondus Lockdown Browser + Respondus Minitor:**

- **Respondus Lockdown Browser** is a custom browser that locks down the testing environment within D2L. While the exam is locked down, you are not able to use other programs on their computer.
- **Respondus Monitor** is a companion application for LockDown Browser® that uses webcam and video technology to prevent cheating during online exams.
- You need to download these two software and have a camera installed with your computer for you to be able to take the exams.

GRADING (SUBJECT TO CHANGE):

Your final grade will be determined approximately by the following weights:

- Assignments & quizzes: 50%
- Test1: 15%
- Test2: 15%
- Final Exam: 20%,

The formula to calculate your total score is

$$\begin{aligned} \text{totalScore} = & \text{totalPointsOfAssignmentsQuizzes} * 50 / \text{maxTotalPointsOfAssignmentsQuizzes} \\ & + \text{test1Score} * 15 / \text{maxTest1Score} \\ & + \text{test2Score} * 15 / \text{maxTest2Score} \\ & + \text{finalScore} * 20 / \text{maxFinalScore} \\ & +/- \text{adjustPercentage (scaling)} \end{aligned}$$

Normally, your final grades are assigned as follows:

- totalScore >= 90 A
- totalScore >= 80 B
- totalScore >= 70 C
- totalScore >= 60 D
- totalScore < 60 F

Please note that

- Any scaling is done solely at the discretion of the professor.
- Any deviation, such as awarding a +/- grade, is done solely at the discretion of the professor.
- Grade distributions will not be adjusted on an individual basis. To be fair, no extra work will be given to individual student to raise her/his grade.
- All discussions on grades must be held within one week of the grade being assigned.

ACCOMMODATIONS STATEMENT

SCSU is an affirmative action, equal opportunity employer and educator. We are committed to a policy of nondiscrimination in employment and education opportunity and work to provide reasonable accommodations for all persons with disabilities. Accommodations are provided on an individualized, as-needed basis, determined through appropriate documentation of need. Please contact Student Accessibility Services (SAS), sas@stcloudstate.edu or 320.308.4080, Centennial Hall 202, to meet and discuss reasonable and appropriate accommodations.

ACADEMIC HONESTY POLICY – SCSU'S STUDENT CODE OF CONDUCT

<https://www.stcloudstate.edu/studenthandbook/code/default.aspx>

OUR HUSKY COMPACT

<https://www.stcloudstate.edu/ourhuskycompact/>

IMPORTANT NOTE:

- **This syllabus is tentative. The professor (me) reserves the right to modify this syllabus, including the schedule, assignments, and grading policies, as necessary to accommodate the needs of the class or in response to unforeseen circumstances.**