Course overview

Course catalog

4 Credits - Theory and practice of computer science. Algorithm development and analysis; data abstraction techniques; elementary data structures; dynamic memory manipulation; debugging; and program design issues. Computer systems and applications. Intended for CS majors.

Course outcomes for students

1. Basic mastery of object-oriented concepts: classes, objects, inheritance, interfaces
2. Ability to write and debug programs using multiple classes
3. Understanding and use of good programming style
4. Understanding recursion; experience implementing a significant number of recursive methods
5. Knowledge of and experience using elementary data structures: arrays, lists, stacks, queues, hash tables, trees, simple graphs
6. Sorting and searching algorithms; game tree algorithms; depth-first and breadth-first tree traversal algorithms; string processing algorithms; regular expressions
7. Basics of algorithm analysis; O-notation; analysis of searching and sorting algorithms

Sections

Lecture	MWF	1:10pm - 2:00pm	KING N310
Lab	MW	5:40pm - 7:00pm	KING N218

Faculty & Teaching Assistants

Instructor Section(01):

- Michael Kulik
- michael.kulik@unh.edu
- Kingsbury W235
- Office hours: TR 10:00am - 11:00am, WF 11:00am - 12:00pm, and by appointment

Teaching Assistants

- Available via Discord

Evaluation

Assessment Group	Percentage
Participation	10%
Lab	15%
Quizzes	15%
Midterm exam	15%
Final exam	20%
Assignments	25%

Participation

Class participation encompasses in-class group work and independent computer science research topics.

Labs

Labs provide hands-on opportunities to develop skills and practice concepts under the support of a teaching assistant (TA). Labs can be attended in the classroom environment where a TA will be present or virtually. Labs are due by 11:59 pm the day of the lab. You are HIGHLY encouraged to attend your lab (either in person or virtually with help through Discord) during the time it is scheduled. We have TAs scheduled to provide assistance during lab times.
The two lowest lab grades will be dropped. Therefore if you miss a lab for any reason, you will receive a 0 on the lab, but it can be dropped (as long as you don't exceed more than two missed labs and don't have 0s on any submitted labs.) Contact your instructor if you have missed more than 2 labs for prolonged illness or other extenuating circumstances.

Please refer to the late policy for labs.

Quizzes

After learning a major area of one or more concepts, a quiz will be held to help us and you assess how well you are learning the new material. There will be a total of 4 quizzes broken down into two parts: concept and programming. The quiz dates are announced in the schedule on MyCourses and occur during the listed lab periods. Quizzes must be taken during your scheduled lab time either in the lab or virtually. You will be required to maintain a Zoom session if you are taking the quiz virtually.

The concept quiz will utilize multiple choice, multiple answer, and fill-in-the-blank question types to assess your understanding of core concepts. The programming quiz will require you to write some code to meet a specific requested task.

Exams

There will be a midterm exam consisting of both a concept and programming portion (similar to the quiz format of assessment) near the mid-semester point.
There will be a final exam consisting of both a concept and programming portion (similar to the quiz format of assessment) at the end of the semester.

Exams must be taken during the scheduled time either at assigned location or virtually. You will be required to maintain a Zoom session if you are taking the exam virtually.

Contact your instructor as soon as possible if you need to make arrangements for an alternative date to take the exam due to a documented, non-reschedulable conflict or significant illness or personal event.

Assignments

There are programming assignments throughout the semester. Most assignments consist of multiple parts each with their own deadline and require you to develop and submit portions of the required program over more than one submission, with a submission separated by one or more weeks.

Assignments must be submitted by the deadline. Exceptions and extensions may be granted, please refer to the late policy for assignments. No assignment grades are dropped.

Grade Disputes

If you believe any means of assessment has been graded unfairly or incorrectly , you may submit a **written** formal request for a regrade using the classroom support form. Such requests must be submitted within **one week** of when the graded assessment in question is published to the gradebook of My Courses. You must be specific about what the assessment item was and what you feel was in error about the assessment. Note, that any coursework submitted for reconsideration may be regraded in its entirety, which could result in a lower score if warranted.

Academic Honesty

While collaboration and communication are encouraged or even required for many parts of the learning process in this course, it is expected that you will submit only your own independent work on any individual assignment or assessment, including programming assignments,

quizzes, and tests. Be aware that computer science is somewhat unique as a discipline, and that cheating is not only limited to direct copying of someone else's answers or code. The solution to a given problem should be the result of your own work, and not from viewing or asking about the details of someone else's code.

The following would be some **examples of cheating when writing a program**:

- Copying all or part of someone else's program.
- Copying all or part of someone else's program, but varying the wording.
- Asking someone to write all or part of a program for you.
- Posting your code so that it is accessible by others
- Writing code that attempts to hard-code output or "fool" a unit test, rather than fulfilling the assignment specifications

On the other hand, the following are some examples of things which would **NOT usually be considered to be cheating** (although you would still benefit to check with an instructor if you are uncertain at all):

- Asking someone how a particular construct in the language works.
- Asking someone how to formulate a particular construct in the language.
- Asking someone for help in finding an error in your program (though if the person is another student in the same course, they should not be viewing your code.) Note: asking someone else for the code necessary to fix the error for you, other than for simple syntactical errors, would usually be considered cheating.
- Asking someone why a particular construct does not work as you expected in a given program.
- Discussing the problem definition or the very high level abstract algorithm for an assignment.

If you have difficulty in formulating the general solution to a problem on your own, or you have difficulty in translating that general solution into a program, ask for help from instructional staff rather than another student as this situation can easily lead to a, possibly inadvertent, cheating situation.

The *Student Rights, Rules, and Responsibilities* handbook specifies the penalties which may be given should a student be caught cheating, as well as the notification and appeal process. It is important to realize that the student who helps another student to cheat is generally considered to be just as guilty as the student who cheated. If you suspect that any copy of your program has been stolen, you should report it immediately to your instructor.

If caught cheating, the penalty for each individual involved is at the discretion of the particular instructor and may range from a lowering (often to 0) of the grade for that particular assignment to failure of the entire course. Regardless of the penalty assigned by the instructor, a letter describing the incident and the penalty is sent to each student involved, and a copy is placed in each individual's file. It is also possible that further action may be taken by the college dean.

Late policy

Programming is a challenging activity and there are many factors that can cause a program not to work correctly. This ranges from minor bugs to programs that will not run. This course has a deadline for each lab and programming assignment. You will want to start assignments early and work with your instructor and teaching assistants for any help on the labs and assignments.

There is a 5% penalty for each day an lab/assignment is late up to 5 days, i.e first day late is 5% off, five days late is 25% off. Labs or assignments will not be accepted after 5 days.

If some non-academic circumstance (extended illness, family leave, etc.) causes you to need more extended time than this process allows, you may contact the office of the Dean of Students, who will provide all your instructors with verification that this non-academic situation impacted your ability to complete coursework and requires extra flexibility. This protects your privacy by not having to provide individual instructors with documentation of personal situations and allows your instructors to maintain fairness in following or relaxing course policies.

Course Technology

This course utilizes several different types of technology to help improve your learning experience.

- **MyCourses**
  - Also known as Canvas, MyCourses is UNH's learning management system.
    - You will use the syllabus section to keep track of when work in the course is due.
    - All grades will be posted to MyCourses to allow you to keep track of your progress in the course. Make sure you are checking gradebook frequently to ensure that the correct grade has been posted.
    - Concept quizzes and exams will also be administered through MyCourses.
- **Discord**
  - An on-line communication platform where students can communicate with TAs for labs and office hours. Information to use the platform is at https://docs.google.com/document/d/1sYAq_YHJ8ZeeGaBh_Z1tFCrmyABnN1c35acTihU2elo/edit
  - Use https://csonline.cs.unh.edu/login to sign up to the CS Discord Server
- **Intellij**
  - Intellij is a popular programming development environment used by many professional programmers. You will learn how to use this environment and use it on labs, assignments, and quizzes.

- **MIMIR**
  - MIMIR is a grading system that runs test cases against programs you develop for labs, quizzes and assignments to help determine their correctness. This will help provide immediate feedback as to whether or not your code is performing the tasks required of it. You need to go through My Courses to initially gain access to this tool. There is no additional cost to you to use this platform.
- **Google Docs**
  - This course utilizes google docs for many forms of communication and activities in the course including labs, POGIL activities, and assignments. These are provided to you as read-only. You do not need a google account to access, but you may find it easier to have a google account set-up in order to work with them. Therefore, it is recommended that if you do not have a google account that you create one. This Google account does not need to utilize your school-issued email address but can if you wish.

Support Options

- **Instructors**
  - You can email or speak directly to instructors about questions or concerns you have.
- **Teaching Assistants**
  - Teaching Assistants are available to help you in many different ways. They hold PAC and office hours, as well as their time in the lab or classroom. One of the best ways you can get help from a TA is to make use of any time during the lab period after you've finished. You can connect with TAs using Discord. Any TA is available to help you, regardless of whether they run your lab or class section. Even after a project has passed, TAs can work with you to understand what went right or wrong in your code. You should especially make use of this opportunity when you struggled with an early part of a multi-part assignment.
- **PAC** - http://pac.cs.unh.edu/
  - The Programming Assistance Center (PAC) is a support center for students taking early programming classes in the Computer Science (CS) and Information Technology (IT) curriculums. Students can receive help on assignments from the class TAs or from peer tutors who have taken similar courses in the past. PAC consultants are not here to do your programs for you, but they will help you with finding bugs and with helping you understand what you need to make progress on your program. Check the PAC website for typical hours of operation.

University Policies

PPE and Social Distancing for In-person Instruction: In alignment with our commitment to the ongoing health and safety of our community during the COVID-19 pandemic, there are several changes in classroom expectations.

All students are required to wear masks in class and campus buildings unless a medical exception is made through an accommodation process. It is your responsibility to obtain a mask before coming to class. For information on proper use of masks, acceptable mask types, and other PPE and social distancing guidelines visit https://www.unh.edu/coronavirus. Students wishing to request a medical accommodation should contact the Student Accessibility Services. Failure to comply with PPE and social distancing classroom protocols is a violation of the Student Rights, Rules & Responsibilities. If you refuse to comply, you will be asked to leave class immediately and you may also be reported to the Office of the Dean of Students and your associate dean.

1. Your instructor or TA may be wearing a face shield without a mask during instruction and only while maintaining at least a 6-foot distance from any student.

2. Prior to class, please wait outside the building, weather permitting, or in the hall or common area, observing social distancing and leaving plenty of room for the prior class to exit the room and building. Wipes are available near the room entrance. Obey entrance and egress signage and any additional faculty directions on entering or leaving the classroom.

3. Each classroom entrance is equipped with hand sanitizer and surface wipes.
    - Use hand sanitizer as you deem appropriate.
    - Wipe down your personal space prior to class and throw the used wipes away on the way out of class or take them with you.
4. Sit only in marked seats. Classes and laboratories were restructured to minimize or eliminate contact between individuals of less than 6 feet.
5. Contract tracing is mandated by the State of New Hampshire. The following practices will facilitate effective contact tracing implementation should the need arise:
    - Students should sit in the same seat for each class period to minimize potential contacts.
    - We ask students to know the names of each of the people sitting closest to them — their nearest neighbors.
    - We will be filling out a seating chart as part of each class.
6. UNH has developed "Wildcat Pass," a web and mobile app to help each of us keep track of the requirements for being in compliance with necessary testing, isolation and quarantine rules that will help to keep our community healthy.
    - Log into your Wildcat Pass each day.

- Be prepared to show your mobile device or a computer printout of your daily Wildcat Pass if asked by a university representative.

Changes to campus mode of operation and instructional modality

1. This class is beginning the semester operating in a Yellowmode of operation (see https://www.unh.edu/coronavirus/operation). This means we will be meeting in-person for lectures and labs. If your health and safety requires shifting to an Orange or Red mode of university operation, the modality and schedule of this course may change.

2. All in-person class meetings will end on Friday, Nov. 20, during the Fall 2020 semester and will move to a remote modality starting Monday, Nov. 23. The type of remote learning we will use in this course is Zoom.]

3. Your classroom is equipped with technology that will provide remote access to class instruction. Because of the need to accommodate potential isolation and quarantine due to the COVID pandemic, lectures or other class meetings for this course may be recorded by the university using UNH media platforms. Such recordings may be available for educational use by students enrolled in the class (including both for instruction and as a review tool), the course instructor(s), and other university officials who support course instruction. Your voice or image may be captured on the recordings, and by enrolling in this course you are consenting to such recording for these purposes. The university and Zoom have FERPA-compliant agreements in place to protect the security and privacy of UNH Zoom accounts. You may not share recordings outside of this course. Doing so may results in disciplinary action.

4. Students must learn how to access this course in all possible formats.
    - Ensure that you have all necessary technology to participate in this course remotely.
    - Consult with the instructor and/or with UNH IT for Students with questions.

Students with Disabilities: The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you are a student with a documented disability or believe you may have a disability that requires accommodations, please contact Student Accessibility Services (SAS) at 201 Smith Hall . Accommodation letters are created by SAS with the student. Please follow-up with your instructor as soon as possible to ensure timely implementation of the identified accommodations in the letter. Faculty have an obligation to respond once they receive official notice of accommodations from SAS, but are under no obligation to provide retroactive accommodations.

Students Experiencing Emotional or Mental Health Distress: Your academic success in this course is very important to me. If, during the semester, you find emotional or mental health issues are affecting that success, please contact the University's Counseling Center

(http://www.unh.edu/pacs/). They are located on the 3rd floor of Smith Hall and can be contacted at (603) 862-2090/TTY: 7-1-1. They provide counseling appointments and other mental health services.

Students Experiencing Housing or Food Insecurity: If you are having difficulty with housing or food, there is support available in and around the UNH community. For help with getting food while on campus, there is the Swipe it Forward program. If you need information about other resources or to let someone know about the impact these difficulties may be having on your studies, contact an instructor and/or the Student Life offices.

Classroom Behavior Expectations: To ensure a climate of learning for all, disruptive or inappropriate behavior (repeated outbursts, disrespect for the ideas of others, etc) may result in exclusion (removal) from this class. As a reminder, cell phone/pda, etc. use, including text messaging, is not permitted in this class by Faculty Senate rule unless by instructor permission. (2009, Behavioral Intervention Team)

Confidentiality and Mandatory Reporting: The University of New Hampshire and its faculty are committed to ensuring a safe and productive educational environment for all students and for the university as a whole. The university requires faculty members to report to the university's Title IX Coordinator (Donna Marie Sorrentino, dms@unh.edu**,** 603-862-2930/1527 TTY) any incidents of sexual violence and harassment shared by students. If you wish to speak to a confidential support service provider who does not have this reporting responsibility because their discussions with clients are subject to legal privilege, you can find a list of resources here (privileged confidential service providers/resources). For more information about what happens when you report, how the university considers your requests for confidentiality once a report is made to the Title IX Coordinator, your rights and report options at UNH (including anonymous report options) please visit (student reporting options).