

## Course Information

Course Title: Advanced C Programming

Section (Course Number)	ECE 26400-001	ECE 26400-002
CRN	59109	59110
Meeting Time	430-545PM Tuesdays and Thursdays	12-115PM Tuesdays and Thursdays
Location	FORNEY G140	FORNEY G140

Course credit hours: 3

Course web page/Blackboard page: Please check Brightspace

Prerequisites (if any): CS 15900, minimum grade of C-

## Information About the Instructor(s)

Section	001	002
Name of the instructor	Yung-Hsiang Lu	Joy Xiaoqian Wang
Office Location	MSEE 222	WANG 3061
Phone number	765-494-2668	765-494-2045
Email Address	yunglu@purdue.edu	joywang@purdue.edu
Office hours	9-10AM MWF <a href="https://purdue-edu.zoom.us/j/96377213378">https://purdue-edu.zoom.us/j/96377213378</a> or by appointment (please make appointment through Lori Carte, <a href="mailto:ljcarte@purdue.edu">ljcarte@purdue.edu</a> )	1:30-3pm MR <a href="https://purdue-edu.zoom.us/j/94312440315">https://purdue-edu.zoom.us/j/94312440315</a> Or by appointment

This course uses online office hours so that students can share screens more easily.

## Course Description

Continuation of a first programming course. Topics include files, structures, pointers, and the proper use of dynamic data structures.

## Learning Outcomes

A student who successfully fulfills the course requirements will have demonstrated:

1. the ability to read and write C programs that uses files. [1,2,6]
2. the ability to read and write C programs that use structures. [1,2,6]
3. the ability to read and write C programs that use dynamic data structures. [1,6]
4. the ability to read and write C programs that use recursion. [1,2,6]

## How to Succeed in this Course

Modern electronic computers were designed during the second World War and the Cold War. Computers are "designed to be stupid" and cannot tolerate "small mistakes". Please be careful about details.

The programming assignments are more complex and require planning. Students are advised to think and plan before writing code. Please read assignment descriptions carefully and understand the requirements.

Please write small pieces of code and test before putting things together. When too many pieces are integrated, it becomes difficult (or impossible) to locate problems.

Listening and watching is not learning. To learn, it is necessary to "do". Write some small programs to validate the understanding of the concepts, before writing the programs for the assignments.

## Learning Resources, Technology, & Texts

Required Text(s): Computer Science: A Structured Approach Using C , 3rd Edition , Forouzan and Gilberg , Course Technology , 2006 , ISBN No. 978-0534491321

## Course Logistics

In Fall 2023, a new grading system (based on github classroom) will be adopted for homework assignments. Students do not need to submit any assignment. Instead, the grading system will retrieve the most recent versions of each assignment from each student for grading.

The reason for this new grading system is to solve a common problem in the past: students forgot to submit the assignments or they forgot to submit all necessary files.

The time for grading is tentatively set to 1 AM after the due day until grading completes. The time may change based on the grading system's performance.

## Instructor's Face-to-Face Office Hours

Section	001	002
Name of the instructor	Yung-Hsiang Lu	Joy Xiaoqian Wang
Office	MSEE 222	WANG 3061
Office Phone number	765-494-2668	765-494-2045

Face-to-Face Office Hours	By appointment Please contact Lori Carte, <a href="mailto:ljcarte@purdue.edu">ljcarte@purdue.edu</a>	By appointment
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## Instructor's Email Availability and Policies

Please post questions to the course's piazza.

Emails are reserved for personal issues.

ECE 264 teaching staff have no training as first responders. Please call 911 if you have an emergency. Email messages marked as "urgent" or "emergency" will be forwarded to Purdue Police and the Office of Dean of Students.

## Virtual Office Hours

Section	001	002
Name of the instructor	Yung-Hsiang Lu	Joy Xiaoqian Wang
Office hours	9-10AM MWF <a href="https://purdue-edu.zoom.us/j/96377213378">https://purdue-edu.zoom.us/j/96377213378</a>	1:30-3pm MR <a href="https://purdue-edu.zoom.us/j/94312440315">https://purdue-edu.zoom.us/j/94312440315</a>

Please read the assignment descriptions before coming to office hours.

## Assignments and Points

ECE 264 in Fall 2023 will be evaluated using

1. 60 points: programming assignments
2. 10 points: online weekly quizzes
3. 30 points: online exams (4 exams, drop the lowest score)
4. 6 bonus points:
  - a. 5 bonus points for online discussion
  - b. 1 bonus point for taking the course evaluation.

Programming Assignments: This course will have 20 programming assignments. Assignments 1-10 are worth 3 points each. Assignments 11-20 are worth 6 points each. Students choose which assignments to submit. The assignment score is capped at 60.

Each weekly quiz has 10 questions and is worth one point. The quiz score is capped at 10.

Each online exam has 20 questions and is worth 10 points. Four exams (including the final exam) will be given. The lowest score is discarded. Each exam is designed for one hour. A student has 3 hours within a 24-hour window to answer the exam. During the 24 hours, students can post their questions and interpretations about the exam on piazza. The teaching staff will not answer during the 24 hours.

Students are encouraged to post and answer questions in piazza. Each posting is worth 0.25 bonus points (maximum of 5).

There will be no other method to obtain any point. The instructor will not provide any additional assignments for anyone.

## Missed or Late Work

For Fall 2023, the new grading system will retrieve students' repositories once a week for grading. Students can finish programming assignments as early as they wish. Their assignments will be graded multiple times and the highest scores are used for the final grades.

Programming assignments 1-15 have 6-day no-penalty extensions and students can obtain the second chance for grading. This extension cannot be interpreted as new deadlines.

The University Senate Document 20-59, April 19, 2021 ***prohibits the collection of assignments during the Quiet Period*** (the week before the final exams). Please understand that the instructors are not authorized to accept programming assignments after December 3. ***No exception will be given.***

If a student needs special accommodation, the student should communicate with the Office of Dean of Students. The instructor will accept assignments from a student ***only if*** the Office of Dean of Students explicitly informs the instructors to give the student special accommodation. When the Office of Dean of Students says, "It is the instructor's discretion", the Office of Dean of Student rejects the student's request and the instructors are not authorized to accommodate the student's request.

## Grading Scale

Grade	Minimum Total Score	Minimum Assignment Score	Minimum Exam Score
A	92	50	25
B	83	46	22
C	74	42	20
D	65	40	18

A student's grade is determined by only the student's ***demonstrated performance in this course***. No other factors will be used in grading. The instructors do not "bump up" students' grades. The instructors will not change a student's grade for any of these reasons:

- "I am very close to X. Can you give me X?"
- "I have good grades in other courses. Can you give me a good grade?"
- "I work very hard."
- "I spent a lot of time."
- "I really enjoy this course."
- "Please give me more assignments."
- "My dog is ill."
- "My cat is ill."
- "My flower is ill."

- "My roommate is ill."
- "I come to your office hours often."
- "If I get a bad grade, my parents will be angry at me."
- "If I get a bad grade, I will be angry at myself."

Any request to change a student's grade will be discarded. No exception will be given.

If a student needs special accommodation, the student should communicate with the Office of Dean of Students. The instructor will accept assignments from a student **only if** the Office of Dean of Students explicitly informs the instructors to give the student special accommodation. When the Office of Dean of Students says, "It is the instructor's discretion", the Office of Dean of Student rejects the student's request and the instructors are not authorized to accommodate the student's request.

## Incompletes

For the official policy on incompletes (as well as other matters related to grading) see the [Grades and Grade reports webpage](#).

University Senate Document 83-8, March 26, 1984; revised by University Senate Document 97-7, April 27, 1998, and University Senate Document 00-5, March 19, 2001: For Incomplete Work: A grade of incomplete is a record of work that was interrupted by unavoidable absence or other causes beyond a student's control.

## Course Schedule

Week	Topic
Week 1	Tools
Week 2	Data types and struct; Program layout
Week 3	Program layout (cont.); Files; <b>HW1-2 due</b>
Week 4	Pointers and arrays
Week 5	Memory allocation and leaks; <b>HW3-5 due</b>
Week 6	Recursion
Week 7	Recursion (contd.), Induction; <b>HW6-7 due</b>
Week 8	<b>October break</b> ; Linked lists
Week 9	Stacks and queues; <b>HW8-10 due</b>
Week 10	Binary trees
Week 11	Binary search trees
Week 12	Tree traversal; <b>HW11-13 due</b>
Week 13	Huffman coding/decoding; <b>HW14-15 due</b>
Week 14	Huffman coding/decoding (cont.); <b>Thanksgiving break</b>
Week 15	Bitwise operations; <b>HW15-20 due</b>
Week 16	Miscellany; <b>quiet week</b>

\* Schedule and assignments subject to change. Any changes will be posted in the learning management system.

## Attendance Policy

Attendance is highly encouraged but not required. Attendance has no point in grading.

Both sections are recorded by Boilercast.

Please be aware that Boilercast occasionally fails. The instructors have no method to produce the recording when Boilercast fails. The instructors will not repeat earlier lectures when Boilercast fails.

## Academic Integrity

Unless expressly allowed, you are expected to complete all assignments by yourself. However, you are allowed to discuss general issues with other students (programming techniques, clearing up confusion about requirements, etc.). You may discuss particular algorithmic issues on Piazza (but do not copy code!). *All students found sharing solutions will be reported to the Dean of students.* Punishments for academic dishonesty are severe, including receiving an F in the course or being expelled from the University. By departmental rules, all instances of cheating will be reported to the Dean.

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing [integrity@purdue.edu](mailto:integrity@purdue.edu) or by calling 765-494-8778. More details are available on our course Brightspace under University Policies.

The [Purdue Honor Pledge](#) "As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue"

Purdue's [student guide for academic integrity](#).

## Nondiscrimination Statement

*Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. [Link to Purdue's nondiscrimination policy statement](#).*

## Students with Disabilities

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: [drc@purdue.edu](mailto:drc@purdue.edu) or by phone: 765-494-1247.

*Purdue has assistance available to help you make learning materials accessible. Some examples include:*

- Information on [Universal Design for Learning](#)
- Guidance on [creating accessible documents](#)

## Emergency Preparation

The teaching staff are not trained first responders. If you have an emergency, please call 911. The teaching staff cannot and will not respond to any message marked as "emergency" or "urgent". The teaching staff will forward such a message to Purdue Police.

## Mental Health Statement

- **If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [WellTrack](#).** Sign in and find information and tools at your fingertips, available to you at any time.
- **If you need support and information about options and resources,** please see the [Office of the Dean of Students](#) for drop-in hours (M-F, 8 am- 5 pm).
- **If you're struggling and need mental health services:** Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours.

In exceptional situations, a student in ECE 264 Fall 2023 may request a specific grade without meeting the requirements described above. The request form is at the end of this document. The instructor will report the case to the Office of Dean of Students. The specialists in the Office will assist the student.

## Netiquette

Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea, but you are not to attack an individual. Our differences, some of which are outlined in the University's nondiscrimination statement below, will add richness to this learning experience. Please consider that sarcasm and humor can be misconstrued in online interactions and generate unintended disruptions. Working as a community of learners, we can build a polite and respectful course ambience.

Please read the Netiquette rules for this course:

- Do not dominate any discussion. Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
- Keep an "open-mind" and be willing to express even your minority opinion.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.

## Violent Behavior Policy

Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity.

See the [University's full violent behavior policy](#) for more detail.

## Diversity and Inclusion Statement

In our discussions, structured and unstructured, we will explore a variety of challenging issues, which can help us enhance our understanding of different experiences and perspectives. This can be challenging, but in overcoming these challenges we find the greatest rewards. While we will design guidelines as a group, everyone should remember the following points:

- We are all in the process of learning about others and their experiences. Please speak with me, anonymously if needed, if something has made you uncomfortable.
- Intention and impact are not always aligned, and we should respect the impact something may have on someone even if it was not the speaker's intention.
- We all come to the class with a variety of experiences and a range of expertise, we should respect these in others while critically examining them in ourselves.

## Course Evaluation

During the last two weeks of the course, you will be provided with an opportunity to evaluate this course and your instructor. Purdue uses an online course evaluation system. You will receive an official email from evaluation administrators with a link to the online evaluation site. You will have up to two weeks to complete this evaluation. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

Students who provide proof of completion of their course evaluation will receive a bonus point.

## Disclaimer

This syllabus is subject to change. Changes will be made by an announcement via email and the corresponding course content will be updated.



# Grade Request Form

Course Number: ECE 264

Course Title: Advanced C Programming

Semester: Fall 2023

Please send this form to your instructor:

- Joy Xiaoqian Wang (joywang@purdue.edu), 12:00-1:15PM Tuesdays and Thursdays
- Yung-Hsiang Lu (yunglu@purdue.edu), 4:30-5:45PM Tuesdays and Thursdays

Student Name:

Student's Purdue ID:

Student's Purdue Email Address:

Date:

I request to receive the grade of \_\_\_\_\_ regardless of my performance in this class.

(Optional) The reason is

I understand that the instructor may report this request to the Office of Dean of Students.

Signature: