

Instructor: Patti Iles Aymond
Office: 3270A Patrick F Taylor Hall
paymond@lsu.edu (**by far the best way to reach me**)
Phone: (225) 578-4359

Sections 1; Class: MW 12 – 1:20 PM;
Fully In-person
139 Allen Hall

Class webpage: Moodle

Livestream Zoom requires advance registration:

<https://lsu.zoom.us/j/94929415156?pwd=eFBkODFha3JZVmNSYTdFby9yS1RSUT09>

Drop-in Office Hours:

Monday & Wednesday 2 PM – 3:30 PM
and by Appointment

<https://lsu.zoom.us/j/94929415156?pwd=eFBkODFha3JZVmNSYTdFby9yS1RSUT09>

Teaching Assistant(s):

Dipesh Gyawali, dgyawa1@lsu.edu

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Course Description

Introduction to systems programming, using the C programming language. Topics include machine-level representation of data and programs, the C programming language and development tools, OS command and shell basics, file I/O, process creation and control, system calls, signals, and virtualization.

Course Topics

- OS command and shell basics
- C language syntax, data types, and control flow
- C strings, pointers, and structs/unions
- C development tools - gcc, gdb, make, version control using git
- machine-level representation of data and programs
- file I/O unbuffered and buffered file I/O
- memory-mapped I/O
- process creation and control, using fork & exec
- pipes
- signals
- basic threading using pthread library
- Unix/Linux network I/O: client/server model, internet protocol, and
- basic socket programming with TCP & UDP
- virtualization
- optimizing program performance
- introduction to concurrency and parallelism

Prerequisites:

Credit or enrollment in CSC 3102.

Course Layout

- **Course Lectures:** The class will be FULLY IN-PERSON.
- **Homework:** Students will complete homework on their own time. Assignments are to be completed in Zybook or uploaded to Moodle, as instructed. Students can expect homework practice problems on a regular basis.

Programming Assignments: Students will complete programming assignments on their own time. Assignments are to be completed in or uploaded to Moodle, as instructed. Students will be asked to apply systems programming constructs to solve small problems, using the C programming language in the Linux environment. Programming assignment grades will be based on the following:

- Correct use of systems programming constructs
- Proper use of C programming language
- Program runs in the Linux environment on the *classes* server
- Shell program and makefile provide compiling, linking, testing, and running commands for the C program
- **Exams:** There will be an 80 minute midterm exam and a two hour non-comprehensive final exam. Exams will be in-person, unless otherwise stated. Arrangements for a make-up test must be made **prior** to the test. The instructor will be following LSU policy PS-22 with regards to valid reasons for missing an exam.

Evaluation

Grading will be based on homework/programming assignments and two exams:

10%	Homework	30%	Midterm Exam
30%	Programs	30%	Final Exam

Final grade will be determined by overall average as follows:

Score	Grade	Score	Grade	Score	Grade
90-92.99	A-	93-96.99	A	97-100	A+
80-82.99	B-	83-86.9	B	87-89.99	B+
70-72.99	C-	73-76.99	C	77-79.99	C+
60-62.99	D-	63-66.99	D	67-69.99	D+
0-59.99	F				

Textbooks

Required Texts:

- The Zybook learning platform version of the custom text CSC 3304: Introduction to Systems Programming.

The required subscription may be purchased directly from the publisher:

1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code: LSUCSC3304AymondSpring2022
3. Subscribe

A subscription is **\$58**. Students may begin subscribing on Jan 04, 2022, and the cutoff to subscribe is May 05, 2022. Subscriptions will last until Jun 04, 2022. Students may download book chapters for access after the subscription terminates.

The text is also available from the LSU B&N Bookstore at a slightly **lower** price.

Recommended Texts:

- *A Practical Guide to Linux: Commands, Editors, and Shell Programming* by Mark G Sobell, ISBN: 9780134774602
- *Computer Systems: A Programmer's Perspective* by Bryant & O'Hallaron, ISBN: 9780134092669

Class Policies

- **Moodle:** The course Moodle will be the official avenue for communication between the instructor, teaching assistants, and students. Moodle will be used for providing general course information, making announcements, making assignments, turning in assignments, and posting grades. Check it often for new or updated information. If you don't see something in Moodle that you think should be there, report it to the instructor as soon as possible.

- **Communication:** All electronic communication between students and the instructor and teaching assistants should maintain a professional decorum (e.g., address the recipient properly, use whole words, complete sentences, and proper grammar). Be sure to include enough detail of the problem so that you form a well-thought out question. The more detail you can give as to your problem, the more likely the instructor or teaching assistant will be able to help you.
- **Distractions:** Please silence your phones and put them away at the beginning of every class. If you receive an urgent call or text during class, please take the device into the hall to complete your call/text. If you must enter class late or leave early, please do so as quietly as possible. Please avoid activities that will distract your classmates (e.g., talking, rustling papers, moving around), etc. The instructor and TAs reserve the right to expel a student from the lecture room or from a lab session for distracting, disruptive, or disrespectful behavior.
- **Preparation for class:** It is important that you come to class prepared. That includes completing the Zybook reading assignment and associated exercises, completing the Zybook challenge problems, and bringing pencil(s) and paper for in-class practice problems.
- **Grading Change requests:** All grades are uploaded to the course Moodle. Concerns about grades must be addressed **within one week** after the graded work is made available. Thereafter, all grade book entries are final. Grade change requests must be submitted to the instructor, in writing, and must include the following:
 - Name of student
 - Date of the assignment/project/exam
 - Date of submission
 - Course number
 - List of the items that need to be corrected along with a concise reason as to why the grade change is needed.
 - Original assignment/test/quiz (not a copy).

Grade change request decisions are at the discretion of the instructor and will be returned as the instructor has time to complete the regrade. Final exam and final grade change requests can be submitted up to two weeks after the final exam. After that time, grade change requests will be denied.

- **Due Dates:** **All work intended for grading must be submitted on time.** Any work not submitted before the cut-off period is not graded. Programming projects will be Zipped and submitted on the course Moodle. Homework assignments will be taken on or uploaded to Zybook or Moodle. **Zybook and Moodle are unforgiving, so do not wait until the last minute to upload your assignment.**
- **Missed Assignment/Exams:** A grade of 0 is awarded for missed assignment/exam in the absence of a valid excuse, as determined by LSU policy. In the unusual circumstance that you must miss an assignment or exam due to medical reasons or other unforeseen emergency, you need to notify the instructor as soon as possible and provide sufficient documentation to verify the claim. The instructor will be following LSU policy PS-22 with regards to valid reasons for missing an exam. If the instructor deems that the excuse is valid and sufficiently documented, the instructor will determine how the missed work will be made up, depending on the circumstance.
- **Special Accommodation:** Students who have a disability that require accommodation(s) should make an appointment with the Office of Disability Services (Phone (225) 578-5919 or TDD: (225) 579-2600) to discuss their specific needs and present a letter from the ODS informing the instructor of their needs. All such matters, by University regulations, are strictly confidential.
- **Collaborative Work:** All class exams, programming projects, and homework assignments must be the independent work of the student. **CODE SHOULD NEVER BE COPIED FROM ANY SOURCE.** Students are encouraged to work together on programming projects, but the work you turn in must be your own. In other words, you can discuss problems and approaches to your programs, but you should never share answers and source code.
- **Exam Dates:**
 - Midterm Exam: Tuesday, February 23, during class
 - Final Exam: Tuesday, May 10, 12:30 PM – 2:30 PM
- **Important Dates:**
 - Wednesday, January 20 – Final day to drop without a W (4:30 PM deadline)
 - Thursday, April 14 – Final day for dropping classes (4:30 PM deadline)
 - Thursday, April 14 – Final day to request rescheduling a final examination when three examinations are scheduled in 24 hours

Expectations

LSU's general policy states that for each credit hour, you (the student) should plan to spend at least two hours working on course related activities outside of class. Since this course is for three credit hours, you should expect to spend a minimum of six hours outside of class each week working on assignments for this course. Visit [here](#) for more information regarding general information for courses.

LSU Student Code of Conduct

The LSU student code of conduct explains student rights, excused absences, and what is expected of student behavior. Students are expected to understand this code as described on the [Code of Conduct](#) page. Any violations of the LSU student code will be duly reported to the Dean of Students.

Academic Integrity

All assignments will be monitored against academic dishonesty. Examples of academic dishonesty include, but are not limited to:

- Accessing the solution manual to the text and copying the solution before attempting the problem on your own, while attempting the problem on your own, or after checking your work and finding your solution to be incorrect.
- Copying a problem solution from a classmate (be it one problem or the entire problem set). The copy may be identical or a rearranged version of another student.
- Giving your completed problem set to another student who has not yet completed their problem set.
- Copying a solution from another student verbatim.
- Peeking at a problem solution without the knowledge of the spied upon student.

All students, regardless of level of guilt, will be reviewed by SAA (Student Advocacy and Accountability) in the event that an academic misconduct violation is detected.

- This is particularly important for those of you who “share” your homework with others. Many times this is done with the best of intentions to help a classmate, but the classmate may copy your solution and present the work as their own. The “sharer”, in the eyes of the university, is just as guilty as the copier.
- **Keep your work safe.** Never leave your homework with other students or send your solution to other students.

If there is evidence of academic misconduct on homework assignments, programming projects, quizzes or exams, all involved parties will be submitted to SAA for review.

Disabilities

Each course syllabus should contain a statement reflecting compliance with The Americans with Disabilities Act and the Rehabilitation Act of 1973, as amended, Section 504. This link contains four example statements: [Sample Syllabus Statements | LSU Disability Services](#)

Academic Success

The primary ingredients of your academic success are attending class, managing your time efficiently, taking good notes, and developing good critical thinking and communication abilities. LSU has a number of excellent resources that will assist you in developing these skills. The place to begin is the Center for Academic Success (CAS). The CAS offers guidance on what learning strategies are best suited to your talents, tutoring in the basic subjects, and workshops on a variety of topics, from note taking to time management. Communication Across the Curriculum assist students in developing the communication skills necessary for academic and professional success. Finally, with respect to professional success, the LSU Olinde Career Center can assist you in choosing a major and a profession that best suits your talents and passions and help you develop a four year career plan to ensure success when you graduate from LSU.

Diversity, Equity & Inclusion Statement

We believe diversity, equity, and inclusion enrich the educational experience of our students, faculty, and staff, and are necessary to prepare all people to thrive personally and professionally in a global society. Therefore, LSU is firmly committed to an environment that affords respect to all members of our community. We will work to eliminate barriers that any members of our community experience.

To make LSU a place where that can happen, we must recognize and reflect on the inglorious aspects of our history. We now acknowledge the need to confront the ways racism, sexism, ableism, ageism, classism, LGBTQ+ phobia, intolerance based on religion or on national origin, and all forms of bias and exploitation have shaped our everyday lives.

We accept personal and professional responsibility to eliminate bias and oppression wherever they are found. We understand our obligation to speak up when we see bias whether it be in our teaching, study, or daily work. Our community will educate themselves proactively and continuously about how to intervene and bring bias to the attention of others with commitment and compassion.

We will hold ourselves accountable for our actions and inactions, and for maintaining intentional, measurable, and meaningful efforts to enhance diversity, equity, and inclusion, including through ongoing evaluation of our policies, practices, and procedures.

Nondiscrimination, Sexual Harassment, & Title IX

LSU provides equal opportunity for all qualified persons in admission to, participation in, or employment in the programs and activities which the university operates without regard to race, creed, color, marital status, sexual orientation, gender identity, gender expression, religion, sex, national origin, age, mental or physical disability, or veteran's status. LSU has implemented a procedure to address complaints for those who believe they have been subjected to discrimination and/or harassment in violation of this policy. Please know that your instructors are here to support you and listen to your experience. We also want you to know that we are mandatory reporters and must report what we know to the Office of Civil Rights and Title IX. All LSU employees, with few exceptions, are required to report instances of sex-or gender-based harassment and discrimination, including sexual misconduct and power-based violence (e.g. sexual assault, stalking, dating violence, domestic violence, sexual exploitation, retaliation, etc.) for which they may not be the victim, but of which they are aware. The [Office of Civil Rights & Title IX](#) is the LSU office responsible for investigating complaints regarding any type of discrimination, sexual harassment, or power-based violence. The [Office of Civil Rights & Title IX](#) is located in 118 Himes Hall and the phone number is 225-578-9000. If you are aware of an individual who has been victimized, you are encouraged to contact the [Office of Civil Rights & Title IX](#) or file an online report by going to www.lsu.edu/support and clicking the Report An Incident box.

If you have been assaulted, harassed, or a victim of violence, we encourage you to contact the [Office of Civil Rights & Title IX](#). Please reach out for help immediately. Some excellent resources available to Baton Rouge residents include:

1. [STAR](#) (Sexual Trauma Awareness and Response; 24/7 hotline: 1-855-435-STAR,
2. [IRIS Domestic Violence Center](#); 24/7 hotline: 1-800-541-9706
3. [THE PHONE Baton Rouge](#); 24/7 hotline: 225-924-3900
4. [The Lighthouse Program](#); 225-578-5718

For additional information visit www.lsu.edu/civil-rights. LSU's policies on sexual harassment (PM 73) and sexual harassment of students (PS-95) are available on the LSU. Website