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

Syllabus

Sections 1; Class: MW 10:30 – 11:50 AM;
Fully In-person
Class webpage: Moodle
Zoom requires advance registration:
https://lsu.zoom.us/meeting/register/tJElduqtqzwrrG9UF_M
NjOaiJH5CDPx34xJH4
After registering, you will receive a confirmation email containing information about joining the meeting.

Virtual Office Hours:
Monday & Wednesday 1PM -3 PM
and by Appointment
https://lsu.zoom.us/j/94929415156?pwd=eFBkODFha3JZV
mNSYdTfby9yS1RSUT09

Teaching Assistant(s):
TBD

Course Description
Advanced object oriented software development with an emphasis on the use of the unified modeling language as a design tool. Prerequisite: CSC 1254 or CSC 1351.

Course Objectives
• Describe, compare and contrast common principles for OO analysis and quality design
• Describe the characteristics of quality software systems
• Describe the relative advantages and disadvantages among several major process models
• Apply fundamental principles of Object Oriented (OO) programming
• Formulate models of a design plan by utilizing the Unified Modeling Language (UML)
• Classify common patterns in OO design
• Create a solution using an appropriately selected design pattern
• Apply communication skills necessary to work in a collaborative environment on a team-based project
• Apply skills in technical writing
• Apply communication skills necessary to participate in an oral presentation and project demonstration

Course Layout
• Course Lectures: The class will be FULLY IN-PERSON. Lecture attendance is required.
• Homework Assignments: Homework assignments will be made available in Moodle. These are to be completed and uploaded to Moodle, as instructed. All UML assignments must be implemented using Enterprise Architect, unless otherwise specified.
• Class Project: Students will work together in a collaborative environment to tackle a complex problem within the problem domain posed by the instructor. Students are expected to work together, divvy up responsibilities, and share resources in the implementation of the project. Every student is expected to do their fair share of work on the project. A student’s project grade will be proportionally adjusted based on level of effort expended on the project. A student cannot successfully complete this course without substantive contribution to the team project.
• Exams: There will be one, 1 hour and 20 minute, midterm exam and a two hour final exam. 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 in-class quizzes, homework assignments, class attendance, the class project, and two exams:

- 10% Homework & Class Attendance
- 25% Midterm Exam
- 40% Class Project
- 25% Final Exam

Final grade will be determined by overall average as follows:

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Textbooks
Required Texts:
- Designing with Objects by Avinash C. Kak; ISBN: 9781118581209

Course Topics
Course topics are expected to include, but are not limited to:
- Building quality software systems
- Introduction to OO development processes: test-driven development, pair programming, agile development
- User stories and system specification
- Refactoring and design improvement
- Universal Modelling Language (UML) for software architecture and state
- Design Patterns: their intent, applicability, benefits, and drawbacks, structure, and implementation
- Advanced object-oriented programming for implementation of certain patterns (interfaces, inner classes, virtual functions, private and multiple inheritance)
- Inter-personal dynamics that occur within a small project team

Class Policies
- **Class Attendance**: Students are required to attend class. Class time will be frequently used as project time; if students are not in class, their team will be adversely affected by their absence. Class attendance may be taken and will count as a homework assignment grade. **Attendance WILL be taken on project kickoff and project presentation days.**
- **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 reserves the right to expel a student from the lecture room for distracting, disruptive, or disrespectful behavior.
• **Preparation for class:** It is important that you come to class prepared. That includes completing the reading assignment in advance and bringing pencil(s) and paper for in-class quizzes and 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:
  o Name of student
  o Date of the assignment/project/exam
  o Date of submission
  o Course number
  o List of the items that need to be corrected along with a concise reason as to why the grade change is needed.
  o Original assignment/test/quiz (not a copy).

Grade 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 Moodle. **Moodle is 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 the instructor. 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 homework assignments must be the independent work of the student. Students are not allowed to use another student’s work, in part or in total, as their own work. Students are allowed to search for and use online and published sources of approaches, algorithms, and code. All approaches, algorithms, and code obtained from an outside source must be clearly marked in all turned in work or it will be considered plagiarism and academic dishonesty.

• **Exam Dates:**
  o Midterm Exam: Monday, March 1, during class
  o Final Exam: Friday, April 30, 10 AM – Noon

• **Project Dates:**
  o Project Kickoff: Monday, January 25
  o **Project Milestone #1** (5%): Project Proposal, due 11PM Monday, February 1
  o **Project Milestone #2** (20%): System Architecture, due 11PM Monday, February 15
  o Core Features should be implemented by Monday March 8
  o **Project Milestone #3** (60%): System Implementation, due 11PM Monday, March 29
  o **Project Presentations** during class (10%): Wednesday 4/7, Monday 4/12, and Wednesday 4/14
  o **Postmortem** (5%): due 11PM Tuesday, April 20; Discussion during class Wednesday, 4/21

• **Important Dates:**
  o Wednesday, January 20 – Final day to drop without a W (4:30 PM deadline)
  o Friday, March 26 – Final day for dropping classes (4:30 PM deadline)
  o Friday, March 26 – Final day to request rescheduling a final examination when three examinations are scheduled in 24 hours
Class Project

- On project kickoff day, the instructor will provide a project framework that project teams must adhere to. Teams are responsible for choosing the domain and application for their project.
- The class will be partitioned into teams of 6. Students may propose teams, but the instructor reserves the right to shuffle teams to ensure teams of size 6.
- While teams are expected to equitably divvy responsibilities among team members, all team members are required to implement system and/or software designs in Enterprise Architect, all team members are required to implement some portion of the functionality, and all team members are required to participate in the in-class final project presentation.
- The team must select a leader that will take on the responsibility of coordinating the team efforts.
  - The team leader is expected to shoulder leadership responsibilities in addition to project responsibilities.
  - If the team leader provides good project leadership, they will get extra project points for their leadership efforts.
  - If the team leader fails to effectively lead the team, the team leader can lose project points.
  - The team may choose to change leadership for different Milestones, upon instructor approval.
- Feedback and recommendations for improvement on a milestone is expected to be addressed in the subsequent milestone.
- Project grades are calculated as follows:
  \[\sum_i (Weight_i \times Grade_i \times PercentContribution_i \times NumTeamMembers \times L_i)\]
  - Where \(i \in \{Proposal, Milestone 1, Milestone 2, Presentation, Postmortem\}\)
    - \(Weight_{Proposal} = 0.05\)
    - \(Weight_{Milestone 1} = 0.20\)
    - \(Weight_{Milestone 2} = 0.60\)
    - \(Weight_{Presentation} = 0.10\)
    - \(Weight_{Postmortem} = 0.05\)
  - \(Grade_i\) is the grade awarded to the team project for Milestone \(i\)
  - \(PercentContribution_i\) is the percentage that an individual team member contributed to the milestone. It is expected that every team member will contribute approximately the same amount to each milestone, but this factor corrects for the situation when contribution is not equitable within a team. This factor is determined by a survey of team members.
  - \(L_i\) is the leadership offset for Milestone \(i\) (either 1.05, 1.0, or 0.95)

Communication Across the Curriculum (CxC)

This is a certified Communication-Intensive (C-I) course which meets all of the requirements set forth by LSU’s Communication across the Curriculum program, including:

- instruction and assignments emphasizing informal and formal technology communication;
- teaching of discipline-specific communication techniques;
- use of feedback loops for learning;
- 40% of the course grade rooted in communication-based work; and
- practice of ethical and professional work standards.

Students interested in pursuing the LSU Communicator Certificate and/or the LSU Distinguished Communicator Medal may use this C-I course for credit. For more information about these student recognition programs, visit www.cxc.lsu.edu.
Academic Integrity

- Students are required to abide by the LSU Code of Student Conduct Handbook. “LSU is an interactive community in which Students, faculty, and staff together strive to pursue truth, advance learning, and uphold the highest standards of performance in an academic, social, and social media environments” [from LSU Code of Student Conduct]. It is assumed that all students enrolled in this course have read the Code of Student Conduct – specifically section 10.1 (Academic Misconduct).
- 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.

Behavioral Misconduct

- Per section 5.1 of the Code of Student Conduct, the Code applies to conduct that occurs on the Campus, at LSU-sponsored activities, and/or when the Student or Registered Student Organization is representing LSU. The University shall have discretion to extend jurisdiction over conduct that occurs off campus when the conduct adversely and significantly affects the learning environment or University community and would be in violation of the Code if the conduct had occurred on campus. This includes behavior that may occur in a remote learning environment, such as email, discussion forums, zoom webinars, or any other platform or solution used for a course. In determining whether to extend jurisdiction, the University may consider its ability to gather information. Potential violations of the Code can be reported through LSU Cares.

COVID-19

We remain under pandemic conditions and expect to be in this state for the entire semester. In order to consistently provide the highest quality LSU education, all students should follow current LSU guidelines. These include the following:
- If you have any signs of illness, do not come to class.
- In order to protect all campus community members, the University requires everyone to wear facemasks/cloths on campus. Failure to do so is a violation of the code of student conduct.
- Wash hands with soap and water or clean with sanitizer frequently, and refrain from touching your face.
- If you have to cough or sneeze unexpectedly, please be mindful of others nearby and cough or sneeze into your elbow or shield yourself the best you can.
- If you have been exposed to others who have tested positive for COVID-19, self-quarantine consistent with current CDC guidelines.
Daily Symptom Checker:
You are required to respond to a daily symptom check request sent via email or text message each morning. Completing the symptom checker will take approximately one to two minutes. Once you have provided information about your symptoms, you will be given feedback on whether or not you are certified to return to campus and attend your classes. Additionally, if you test positive for COVID-19, you are required to report it in your daily symptom checker application.

Resources for Students:
Your health and safety are LSU’s top priority. If you are feeling ill or overwhelmed with anxiety, please contact the LSU Student Health Center for medical advice and mental health support. General health care and mental health support are available for all enrolled students through telehealth appointments.

Unexpected Changes to Courses:
Due to the unpredictable nature of the situation, the format of the course and/or requirements may be forced to change, and if this is the case that students will be given appropriate notification.