LEWIS UNIVERSITY
A Catholic and Lasallian University

Object-Oriented Programming – 44000

Syllabus

Spring Semester 2020

I. Instructor Information

Instructor's name: Eric Pogue

Office hours: TR 1-2pm CT by appointment

Appointments: Appointments can be requested via email

Lewis Phone Number: +1 (630) 343-5304

Lewis email address: epogue@lewisu.edu

II. Course Information

Course: Software Engineering (CPSC-44000-LT1)

Course Credit Hours: 3

Course description:

Methods, strategies, and tools for implementing software systems, particularly as part of a development team. Topics include the software development life cycle, Unified Modeling Language, software testing techniques, software security, open-source development, requirements gathering and documentation, maintenance, and basic software project management.

Prerequisites: CPSC-24500 Object-Oriented Programming

Course meeting times: WF 2-4:30pm CT January 13th through March 7th

Meeting location: Virtual with videos provided for those who cannot attend

Course final: Friday, March 6th 2-4:30pm CT

Student Learning Outcomes:

1. compare and contrast various software process models
2. be able to elicit and analyze requirements of a proposed application
3. write clear and complete requirements documents
4. identify the events to which the software must respond and document them as a set of use cases
5. identify security issues in a software projects requirements and design
6. use techniques to produce self-documenting code
7. use coding strategy to produce secure code
8. draw diagrams to model workflows

9. develop and use diagrams to model classes and the interaction of classes
10. understand and practice unit testing and functional testing
11. understand the techniques used to test non-functional requirements such as performance and security
12. develop a project schedule

Program student learning outcomes:

1. develop programs using languages having different programming paradigms and for a variety of platforms
2. select the most appropriate data structures and algorithms for the given problem
7. explain how programming languages are designed and implemented

Baccalaureate Characteristics:

1. Essential Skills
6. Critical Thinking

III. University Mission Statement

Lewis University, guided by its Catholic and Lasallian heritage, provides to a diverse student population programs for a liberal and professional education grounded in the interaction of knowledge and fidelity in the search for truth.

Lewis promotes the development of the complete person through the pursuit of wisdom and justice. Fundamental to its Mission is a spirit of association, which fosters community in all teaching, learning and service.

How this course connects to the University Mission:
This course will allow us to extend our knowledge in software development, provide us the foundation for lifelong learning in this domain, and provide us the opportunity to assist each other on our learning journey.

IV. Course Materials

Textbook(s):

Fox and Patterson. Engineering Software as a Service: An Agile Approach Using Cloud Computing. ISBN: 978-0984881246.

Additional readings from Safari Books Online.

Supplemental readings, videos, online materials: Additional readings, videos, and online materials will be provided.

Hardware and software requirements: This course requires access to multiple software tools. There are generally available for free but will need to be installed and utilized from a Windows or Macintosh computer.

Other required materials or costs: During this course we will be setting up and utilizing GitHub and Microsoft Azure accounts. We will be able to complete course assignments utilizing these resources for free or at a very low cost (estimated less than $20). A credit card will be needed to sign up for these accounts.

V. Instructional Methods and Activities

Modality of Instruction: This course will be online.

VI. Course Schedule

The course is broken into 8 modules (sprints) with each module being one week.

Module	Topics	Textbook Readings
1	Introduction to SaaS and Agile Development The Architecture of SaaS Applications Getting Started with Git & GitHub Cloud Computing with Microsoft Azure	Chapter 1 Chapter 2 A.5 and A.6
2	Ruby Overview Getting Started with JavaScript Getting Started with Bootstrap Getting Started with Node.js	Chapter 3 and Chapter 4 Chapter 6
3	Behavior Driven Development Plan and Document Requirements Getting Started with Microsoft Azure and Node.js	Chapter 7
4	Testing and Test-Driven Development HTML, CSS, JavaScript, and Bootstrap Azure, Node.js, JavaScript, and Express	Chapter 8
5	Maintenance Class Project – Sprint 1	Chapter 9
6	Project Management Scaled Agile Class Project – Sprint 2	Chapter 10
7	Design Patterns Class Project – Sprint 3	Chapter 11
8	Performance, Releases, Reliability, and Security Software Architecture Class Project – Sprint 4	Chapter 12

Schedule Changes: *Material changes to the course schedule will be communicated through course lecture and/or Blackboard announcements.*

VII. Grading Criteria and Course Policies

Assignments and Course Requirements:

Assignments for this course will take the form of Programming Projects, Quizzes, Discussion Board topics, a class Demonstration, and a Final Project.

Course Grade: The course grade will be based on the following:

Assignment	#	Pts	Total Pts	% of Grade
Lab	8	30	240	60%
Quiz	8	16	128	32%
Discussion Board	8	3	24	6%
Reflections	8	1	8	2%
		Totals:	400	100%

Grading Policies: No late assignments will be accepted. It is vastly preferable to turn in a partially complete assignment than to turn in a late one.

Similarly, it is vastly more beneficially to turn in a programming or lab assignment that has 70% of the features fully implemented than to turn in an assignment that has 100% of the features partially implemented.

Final course letter grade will be determined using the following scale:

A	>= 93		
A-	90-92.99	C-	70-72.99
B+	87-89.99	D+	67-69.99
B	83-86.99	D	63-66.99
B-	80-82.99	D-	60-62.99
C+	77-79.99	F	< 60
C	73-76.99		

Course Policies: Class attendance is required unless otherwise specified. During our class time we will remain focused on the topics at hand, avoid utilizing phones or email, and be inclusive of our fellow classmates.

Changes to Course Assignments or Grades: *Changes to the course assignments or grades will be communicated through course lecture and/or Blackboard announcements.*

VIII. Information for Students

Requests for Reasonable Accommodations

Lewis University is committed to providing equal access and opportunity for participation in all programs, services and activities. If you are a student with a disability who would like to request a reasonable accommodation, please speak

with the Learning Access Coordinator at the Center for Academic Success and Enrichment (CASE). Please make an appointment by calling 815-836-5593 or emailing learningaccess@lewisu.edu. Since accommodations require early planning and are not provided retroactively, it is recommended that you make your request prior to or during the first week of class. It is not necessary to disclose the nature of your disability to your instructor. For more information about academic support services, visit the website at: www.lewisu.edu/CASE.

Lewis University has adopted Blackboard Ally providing alternative formats for files uploaded by instructors. Students can click the down arrow next to any file and select Alternative Formats.

Sanctified Zone

Guided by its Catholic and Lasallian heritage, Lewis University is firmly committed to fostering a campus atmosphere that is permeated by its Mission values of Fidelity, Wisdom, Knowledge, Justice, and Association. Accordingly, we have declared the University campus to be a Sanctified Zone, a place and a people *United in Diversity.* The active promotion of diversity and the opposition to all forms of prejudice and bias are a powerful and healing expression of our desire to be Signs of Faith (Signum Fidei) to each other. To learn more about the Sanctified Zone, please visit: http://www.lewisu.edu/sanctified zone

Academic Integrity

Scholastic integrity lies at the heart of Lewis University. Plagiarism, collusion and other forms of cheating or scholastic dishonesty are incompatible with the principles of the University. Students engaging in such activities are subject to loss of credit and expulsion from the University. Cases involving academic dishonesty are initially considered and determined at the instructor level. If the student is not satisfied with the instructor's explanation, the student may appeal at the department/program level. Appeal of the department /program decision must be made to the Dean of the college/school. The Dean reviews the appeal and makes the final decision in all cases except those in which suspension or expulsion is recommended, and in these cases the Provost makes the final decision.

University Student Complaint Policy

The University Student Complaint Policy can be found at
lewisu.edu/studentcomplaints

University Grade Appeal Policy

The University Grade Appeal Policy can be found at
lewisuedu/studentcomplaints

Center for Health & Counseling Services

To support student success, all Lewis students are eligible for free health and mental health services on the Romeoville campus. This includes commuters and those living on campus, part-time and full-time students, graduate and undergraduate students, and those taking Lewis classes at other locations. For more information, visit the Center for Health & Counseling website at www.lewisu.edu/studentservices/health or call (815)836-5455.