

## CS 246 System Design – Winter 2019

Course: System Design	Location: Building 19, Room 128
Course No: CS 246	Time: MW 12:00 – 3:50
Instructor: Paul Wilkins	Office: Bldg 19/Rm 150
E-mail: <a href="mailto:wilkinsp@lanecc.edu">wilkinsp@lanecc.edu</a>	
Office Hrs TTh 1-2 (Room 150), additional hours TBA	

### Course Description

In this course, students will learn to design and plan software systems and other large-scale projects. Topics covered will include requirements gathering, design evaluation and documentation, and object-oriented program design. By the end of the course, students will have produced a design for a significant software project in a team environment.

### Learning Outcomes

The intent of this course is to enable you to design and plan significant software projects by identifying needs, creating user stories, and implementing those stories using project planning tools and appropriate software testing.

### Course Content

1. Idea, concept generation (Developing software for the marketplace)
  - a. Researching similar ideas and use patterns
  - b. Understanding potential users
2. Requirements gathering/documenting (Developing software for a client who has a specific need)
  - a. Meeting with users to understand their needs
  - b. Developing UML models and software prototypes
  - c. Writing a rubric that describes a successful implementation
    - ie. User Stories
3. Agile project teams (user stories and backlog)
  - a. User Stories
  - b. Stakeholders
  - c. Sprints and working software
  - d. Story points and burn-down charts
  - e. Managing the backlog (reprioritizing)
  - f. Scrum
4. Object Oriented Design
5. Ux Design
6. Design documentation
  - a. Prose architectural description of the system
  - b. UI diagrams
  - c. UML Class diagrams
7. Version Control
8. Issue Tracking

9. Test driven development
10. Design and Architectural patterns

## Learning Resources

### *Texts*

There is no required text for the course, but for students who would like to have reading material to supplement the in-class content, I recommend the following textbook:

*Software Engineering: Theory and Practice: 4<sup>th</sup> Ed.*, by Shari Pfleeger and Joanna Atlee.

### *Web Sites*

<http://classes.lanecc.edu> (LCC's moodle site) will be used to host the web site for the course. The site is designed to provide you with all of the information you need about the content and structure of the course including: lecture notes, sample files, assignment descriptions and due dates, and announcements related to the course.

## Assessment Activities

The learning outcomes will be demonstrated by completing weekly assignments, in-class activities, and a final project which will serve as a design for your capstone project in the spring. Assignments will be 60% of your grade, in-class activities 10%, and the final project 30%.

For the final project, you will be placed into groups of 3-5 students, which will also serve as your project groups for the capstone this spring. Groups will be assigned in week 6 with your input.

Final grades will be assigned as follows:

	+		-
<b>A</b>	98-100	92-97	90-91
<b>B</b>	88-89	82-87	80-81
<b>C</b>	78-79	72-77	70-71
<b>D</b>	68-69	62-67	60-61
<b>F</b>		Below 60	

## Important dates

Sunday, 1/13	Last day to drop and receive a refund
Monday, 1/21	Martin Luther King Jr Day, college closed
Monday, 2/18	Presidents Day, college closed
Friday, 3/1	Last day for schedule changes
Friday, 3/15	Last day to turn in homework assignments and receive credit
Monday, 3/18	Final Presentation (Normal class time and location, 12-1:50)

## **Statement of Tolerance**

Lane Community College is committed to providing a respectful working and learning environment that is free from discrimination, harassment and retaliation. Lane Community College is committed to equal opportunity, affirmative action, cultural diversity and compliance with the Americans with Disabilities Act. The College prohibits discrimination in admissions, employment and access to college programs, activities, and services. Sexual harassment and other conduct which creates a hostile, intimidating or offensive environment is prohibited by the College. For assistance, support or help in resolution of problems, or information about complaint procedures, please refer to the Lane Community College Catalog.

## **Accessibility and Accommodations**

Lane Community College (LCC) is dedicated to providing inclusive learning environments. The Center for Accessible Resources (CAR) coordinates all academic accommodations for students at LCC. If you anticipate or experience academic barriers due to a disability, to request assistance or accommodations, contact the Center for Accessible Resources at [\(541\) 463-5150](tel:5414635150) or [accessibleresources@lanecc.edu](mailto:accessibleresources@lanecc.edu).

Please be aware that any accessible tables and chairs in this room should remain available for authorized students who find that standard classroom seating is not usable.