# SER 421 Web Apps and Mobile Systems (ONLINE), Fall 2016 Session B

## Catalog Description

## Distributed Web and mobile applications, their design, architecture and supporting technologies; user-interaction concepts and technologies; design and implementation of software servers for Web and mobile systems.

## General Information

Instructor: Dr. Kevin Gary, k[gary@email.asu.edu](mailto:gary@email.asu.edu), (480)727-1373

Office Hours: MW 1pm-2:30pm, Zoom: https://zoom.us/j/4961527298

Office: Peralta 230R

Class Meeting Time: ONLINE

Schedule Line Number: 78436

Class Website: Blackboard

TA: Ishrat Ahmed, Soham Shiragoar, Office Hours will be posted on Blackboard

## Prerequisites

* SER321
* **Programming. You are expected to understand how to implement algorithms and data structures (SER222), not be intimidated by new language syntax or paradigms (SER221), be comfortable with OO concepts (SER200, SER215), software engineering best practices and design patterns (SER316), understand runtime environments (SER330), and sockets, threads, and distributed computing concepts (SER321).**
* A desire to learn and participate in class.

## Expanded Course Description

This course will cover the software engineering concepts and design/implementation fundamentals of developing production-quality web and mobile applications. Concepts will be emphasized in lecture materials, while programming exercises will reinforce these concepts through state-of-the-art technologies. Students are expected to view all pre-recorded video and other materials and spend time actively working through code examples. Students will understand key concepts in the design, implementation, and execution of web and mobile application architectures on both the client and the server. Further, the course will emphasize software engineering in the context of web and mobile development, including concepts such as the structure of software development organizations, performance and scalability testing, usability, security, and the contextualized application of software design patterns and processes in a web and mobile context.

## Course Outcomes

After successfully completing SER421, the student will:

1. (Technical Competence) possess technical competency in developing web and mobile applications in web standard technologies.
2. (Practice) understand principles of software engineering in a mobile/web application context, including but not limited to software testing, security, and quality processes.
3. (Design) understand and apply principles of software design and architecture to web applications.
4. (Professionalism) understand the structure of the web development organizations and the role of the modern developer.

## Textbooks

There are no required texts for this course, however required readings will be posted on the class website.

**Note:** *This course will make use of multimedia web content and code from Dr. Gary and from some 3rd party sources.*

## Grading

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| **Category** | Points | Percent of Grade |
| **Labs (7)** | 600 | 60% |
| **Midterm Exam (11/14/16)**  **Final Exam (12/2/16)** | 150  250 | 15%  25% |

## The instructor reserves the right to add more assessments if it is deemed that the class is not keeping pace with the material.

## Programming Assignments

There will be 7 labs, two individual labs (one at the start of the session and one mid-session), and 5 labs that may be done individually or in pairs. No student may pair with the same student more than once. Specific instructions on the requirements, grading criteria, and submission process will be given when the assignments are handed out. Lab assignments will focus on programming, but additional activities may be required for submission as well.

## Exams

2 exams will be given. Two exams will be given, a midterm and a cumulative final exam.

## Grade Appeals

Students have the right to appeal a grade in writing. Submit your typed appeal with the graded lab or exam, stating the reason for your appeal. All appeals must be turned in no later than one week after the grade has been posted on Blackboard. Past due appeals will be denied and the student will not receive a response.

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| Course Topics: See the Modules page on Blackboard: My approach to the course will be to use detailed implementation for the reinforcement of software engineering concepts. The technologies you get exposed to and the programs you construct will have a very short half-life, however it is my goal for you to discover enough of the software engineering principles in practice to translate to new technologies as they become popular. |

## Computer and Software Support

As an upper division class, you are expected to be proficient in administering your own computing environment. You will be utilizing various technologies throughout the semester, and deploying software to your own local resources and/or resources the instructor provides. This course does not require a specific machine or operating system. We will use Android Studio at the end of the course and having an android device is helpful but not required (you may use the Android Virtual Device emulator).

## Use of Online Learning Facilities

You will be using campus computing and library resources to complete your coursework. All students are required to utilize these resources carefully and in an ethical manner. Care must be taken to ensure your work does not interfere with other students in this class. Students are responsible for following ASU policies on computing resource usage. Any student treating resources in a malicious manner faces forced withdrawal from the class.

## Cheating and Ethics Policy

Cheating is strictly forbidden in this class. Cheating is defined as “presenting someone else’s work as your own”. Any instance of cheating, no matter how small or benign, will result in an E or EX grade, and referral to the Dean’s Office in the Fulton Schools of Engineering. Students should review the FSE student honor code (<http://engineering.asu.edu/integrity/honor-code/>) and are encouraged to take the honor code pledge. Students are expected to follow ASU’s Academic Integrity Policy, <https://provost.asu.edu/academicintegrity>. *Cheating specifically includes the copying of code from the Internet without attribution to the source* ***and*** *permission of the instructor.*

Students may be alowed to work in small teams (pairs) on several programming assignments. You are to work with your partners and only your partners as directed by the instructor; receiving assistance from anyone else other than your partners, the graders, teaching assistants, approved tutors or the instructor is considered cheating. This also include outside resources: friends, family, co-workers, or the utilization of online code repositories and samples. Further, on any paired assignments *you individually remain responsible for the entire implementation* – you must understand it fully, and there will be no differentiated grades awarded between the pair. From an ethics standpoint, you have a professional responsibility to your partner to give your best effort on each programming assignment. Failure to do so will be considered an ethics violation and reported as per ASU policies stated above.

**Cheating in this class may result in failure of the course. There will be no warnings or exceptions.**

**The penalty for an ethics violation will be a reduction in one letter grade to your final grade assignment.**