# San José State University Computer Engineering CMPE 137, Wireless Mobile Software Engineering, Section 01

# Spring, 2016

## Course and Contact Information

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| Instructor: | Keith C. Perry |
| Office Location: | Engineering Building 279 |
| Telephone: | (408) 390-2464 (cell) |
| Email: | [Keith.Perry@sjsu.edu](mailto:Keith.Perry@sjsu.edu) |
| Office Hours: | Wednesdays 5:00-6:00 pm  Fridays 2:00-3:00 pm |
| Class Days/Time: | Fridays 3:00-5:45 |
| Classroom: | ENGR 325 |
| Prerequisites: | CMPE 131 |

## Course Format (Delete if not applicable)

This course is delivered using In-Person Instruction Mode with emphasis on group participation inside and outside the classroom employing other modes such as flipped classroom delivery format as applicable.

## Canvas Learning Management System and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas Learning Management System course website. You are responsible for checking Canvas at least twice a week throughout the course for updates as well as the email you have registered on MySJSU. Any reduction in grade as a result of missing important updates on these two mediums or not communicating to the instructor using the email stated above (i.e. do not use any other email the instructor may have such as his personal email or via Canvas) are your sole responsibility. If you do not receive an email from your instructor by the end of the first week, please check to ensure your email registered on MySJSU is current and notify your instructor of any issues.

## Course Description

## Mobility analysis, design principles, techniques, and methods for software systems on a variety of wireless and mobile Internet based computing and communication platforms, such as advanced pocket/tablet PCs, GPS, Bluetooth, Infrared, Wi-Fi, and RFID. Design multi-disciplined mobile project.

## Please reference [CMPE137 Catalog Description](http://info.sjsu.edu/web-dbgen/catalog/courses/CMPE137.html) at

<http://info.sjsu.edu/web-dbgen/catalog/courses/CMPE137.html>

**Program Outcomes**

1. Ability to apply knowledge of mathematics, science, and engineering
2. Ability to design and conduct experiments, as well as to analyze and interpret data
3. Ability to design a system, component, or process to meet desired needs within  realistic constraints such as economic, environmental, social, political, ethical, health  and safety, manufacturability, and sustainability
4. Ability to function on multi-disciplinary teams
5. Ability to identify, formulate, and solve engineering problems
6. Understanding of professional and ethical responsibility
7. Ability to communicate effectively
8. Broad education necessary to understand the impact of engineering solutions in a  global, economic, environmental, and societal context
9. Recognition of the need for, and an ability to engage in life-long learning
10. Knowledge of contemporary issues
11. Ability to use the techniques, skills, and modern engineering tools necessary for  engineering practice.

## Course Learning Outcomes (CLO)

At the end of the course, the student will be able to:

1. evaluate software engineering technologies, standards, and architectures for mainstream mobile platforms.

2. demonstrate knowledge in mobile application development software engineering methodologies and design patterns, and the capability to apply them in practice.

3. demonstrate hands on experience in designing, building, testing, and debugging enterprise applications for mainstream mobile platforms.

4. design and implement a mobile application in a group environment on one of the two mainstream mobile platforms.

## Required Texts/Readings

### Textbook

### Mathias, M Gallagher, J. (2015). *Swift Programming: The Big Nerd Ranch Guide.* Atlanta, GA: Big Nerd Ranch, LLC. ISBN-100134398041, ISBN-13 978-0134398044

Phillips, B. Hardy, B. (2015). *Android Programming: The Big Nerd Ranch Guide.* Atlanta, GA: Big Nerd Ranch, LLC. ISBN-10 0134171454 ISBN-13 978-0134171456

### Other Readings

Please reference [Apple’s Developer Library](https://developer.apple.com/library/mac/documentation/Swift/Conceptual/Swift_Programming_Language/index.html) at

<https://developer.apple.com/library/mac/documentation/Swift/Conceptual/Swift_Programming_Language/index.html>

*Thinking in Java (4th Edition),* by Bruce Eckel, ISBN: 978-0131872486

… and other readings as assigned on Canvas.

### Other equipment / material (optional)

Mac and PC development platforms – Lab Engineering 206

## Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at http://www.sjsu.edu/senate/docs/S12-3.pdf.

This course consists of lectures, in-class quizzes, exams, lab assignments, and one term project. The term project will be performed in groups of 3-4 students. The assignments involve intensive Swift and Java programming requiring significant dedication and focus. You will need to investigate and research materials beyond those presented in lectures and on Canvas to successfully finish the programming assignments.

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at http://www.sjsu.edu/senate/docs/F69-24.pdf states that “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

No late assignments will be accepted. No requests for extension will be accepted.

[University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at http://www.sjsu.edu/senate/docs/F69-24.pdf states, “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

## Grading Policy

Grading components:

* Quizzes 10%
* Labs 20%
* Term Project 25%
* Midterm exam 20%
* Final exam 25%

|  |  |  |
| --- | --- | --- |
| A+ : > 94 | A : 90 – 93.99 | A- : 85 – 89.99 |
| B+ : 80 – 84.99 | B : 75 – 79.99 | B- : 70 – 74.99 |
| C+ : 65 – 69.99 | C : 60 – 64.99 | C-  : 55 – 59.99 |
| D+ : 50 – 54.99 | D   : 45 – 49.99 | D-  : 40 – 44.99 |
| F    : < 40 | (0.5 - 0.9) = 1 | (0.1 - 0.4) = 0 |

While it is everyone’s responsibility to ensure equal contribution from members, grading of group work takes individuals’ participation into consideration as assessed by the instructor and student peers.

Before assigning final grades, a curve may be applied based on class results. For example, good interim marks in a class that is doing very well might result in a lower final grade.

Note that “All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.” See [University Policy F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

## Classroom Protocol

You are expected to arrive in time for class.

Cellphone: While in class, mute your cellphone and do not accept/make calls or texts. Offenders who do not stop once requested by the instructor will be referred to the Judicial Affairs Officer of the University.

In the classroom, students are allowed to use computers only for class-related activities. If you use your laptop for class related activities, sit in the front row of the room. Otherwise, close your laptop. These include activities such as taking notes on the lecture underway, following the lecture on Web-based PowerPoint slides that the instructor has posted, finding Web sites to which the instructor may direct students to research during lectures, or developing software in conjunction with the instructor’s code development on the projector screen. Students who use their computers for other activities or who abuse the equipment in any way, at a minimum, will be asked to leave the class, and, at a maximum, will be referred to the Judicial Affairs Officer of the University for disrupting the course (such referral can lead to suspension from the university). Students are urged to report computer use that they regard as inappropriate (i.e., used for activities that are not class related) to their instructors.

Eating and/or drinking (except water) is prohibited in the classroom as it can disrupt the class.

## University Policies

### General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. To learn important campus information, view [University Policy S90–5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at http://www.sjsu.edu/senate/docs/S90-5.pdf and SJSU current semester’s [Policies and Procedures](http://info.sjsu.edu/static/catalog/policies.html), at <http://info.sjsu.edu/static/catalog/policies.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not address the issue, it is recommended that the student contact the Department Chair as the next step.

### Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic\_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at http://www.sjsu.edu/aars/policies/latedrops/policy/**.** Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at http://www.sjsu.edu/advising/.

### Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor’s permission to record the course and the following items to be included in the syllabus:

* “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
  + It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
  + In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
* “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

### Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at http://www.sjsu.edu/studentconduct/.

### Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD\_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

### Accommodation to Students' Religious Holidays

San José State University shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class. It is the responsibility of the student to inform the instructor, in writing, about such holidays before the add deadline at the start of each semester. If such holidays occur before the add deadline, the student must notify the instructor, in writing, at least three days before the date that he/she will be absent. It is the responsibility of the instructor to make every reasonable effort to honor the student request without penalty, and of the student to make up the work missed. See [University Policy S14-7](http://www.sjsu.edu/senate/docs/S14-7.pdf) at http://www.sjsu.edu/senate/docs/S14-7.pdf.

## Student Technology Resources

Computer labs for student use are available in the [Academic Success Center](http://www.sjsu.edu/at/asc/) at http://www.sjsu.edu/at/asc/ located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

## SJSU Peer Connections

Peer Connections’ free tutoring and mentoring is designed to assist students in the development of their full academic potential and to inspire them to become independent learners.  Peer Connections tutors are trained to provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group and individual tutoring are available.  Peer Connections mentors are trained to provide support and resources in navigating the college experience. This support includes assistance in learning strategies and techniques on how to be a successful student.  Peer Connections has a learning commons, desktop computers, and success workshops on a wide variety of topics.  For more information on services, hours, locations, or a list of current workshops, please visit [Peer Connections website](http://peerconnections.sjsu.edu) at http://peerconnections.sjsu.edu for more information.

## SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the [Writing Center website](http://www.sjsu.edu/writingcenter) at http://www.sjsu.edu/writingcenter. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on Facebook. (Note: You need to have a QR Reader to scan this code.)



## SJSU Counseling and Psychological Services

The SJSU Counseling and Psychological Services is located on the corner of 7th Street and San Carlos in the New Student Wellness Center, Room 300B. Professional psychologists, social workers, and counselors are available to provide confidential consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis.  To schedule an appointment or learn more information, visit [Counseling and Psychological Services](http://www.sjsu.edu/counseling) website at [http://www.sjsu.edu/counseling](http://www.sjsu.edu/counseling" \t "_blank).

# CMPE/SE 137 Wireless Mobile Software Engineering, Spring 2016,

# Course Schedule

*Please note the schedule is subject to change with fair notice. To avoid duplication and maintain currency, please use Canvas to obtain the most up-to-date schedule as well as assignments for this course.*

## Course Schedule

| Week | Date  (Friday) | Topics, Readings, Assignments, Deadlines |
| --- | --- | --- |
| 1 | Jan 29 | Greensheet, course, and iOS overview. Developing the first application: a Calculator |
| 2 | Feb 5 | Applying MVC to the Calculator App, Swift & the Foundation Framework |
| 3 | Feb 12 | Views, Delegation & Gestures |
| 4 | Feb 19 | Multiple MVCs & VCL Autolayout |
| 5 | Feb 26 | ScrollView Multithreading & Table View |
| 6 | Mar 4 | Dynamic Animation, AirDrop & Bouncer |
| 7 | Mar 11 | Mapkit, Segues, Notifications & Visual Effects |
| 8 | Mar 18 | Review |
| 9 | Mar 25 | Midterm exam |
| 10 | Apr 1 | \*\*\* Spring Recess \*\*\* |
| 11 | Apr 8 | Introduction to Android  First Android App, Debugging Android Apps |
| 12 | Apr 15 | Android MVC, Common UI Views and Layouts  Activity and it Life Cycle, Intent |
| 13 | Apr 22 | Fragments, Fragment Arguments, Retain Fragments  ListFragment and ViewPager |
| 14 | Apr 29 | Action Bar, Context Menus, Dialog, and Android Security |
| 15 | May 6 | Loopers, Handlers, and HandlerThread  Background Tasks and Services |
| 16 | May 13 | Team Presentations |
| Final Exam | May 20 | 12:15-2:30 – Note: Different time than regular classes during the semester |