

EXAMPLE CID FOR A SPECIFIC TOPIC

CSC 276 Topics in Computer Science

3 cr.

Instructor: TBA
email: TBA@salemstate.edu

Office: location
Office Hours: days and times

Phone: (978) 542-extension

| Section | Time | Room | Final Exam |
|---------|----------------|----------|---------------|
| nn | days and times | location | date and time |

Catalog description:

This course is used for the exploration of emerging aspects of applied computer science. The course is intended for coverage of a single area or a strongly unified collection of topics not otherwise available in the Computer Science curriculum. The topic(s) will be announced prior to registration. This course may be repeated once for additional credit if topics covered are different. Three lecture hours per week. Course content and prerequisites are variable.

Prerequisite: Variable depending on topics.

[Topic for this offering: Mobile Application Development] This course introduces students to application development for mobile devices. Students will learn essential concepts and practices at the core of modern mobile computing, including setting up the development environment, understanding the application lifecycle, user interface design, developing for different types of devices, and the mobile software process from design and development to testing and publication of commercial-grade applications. Even though the concepts covered in the course are platform independent, the course focuses on using Android as the development platform. Three lecture hours per week, plus programming work outside of class.

[Prerequisite for this offering: CSC 115.]

Course Goals:

The purpose of this course is for students to:

- CG01: Be introduced to and gain experience with emerging applied computer science technology
- CG02: Understand the relevance of the targeted technology and its potential impact on software development and future trends in the relevant application arenas
- CG03: to develop an understanding of mobile application development methodologies and techniques
- CG04: to develop the skills necessary to design, implement, test and publish mobile applications

Course Objectives:

Upon successful completion of the course, a student will be able to:

- CO01: Recognize circumstances favorable for the development of new technologies in support of advances in the field of computer science
- CO02: Recognize opportunities to apply emerging computer science technologies
- CO03: Utilize selected technologies to realize appropriate goals and objectives
- CO04: explain how the mobile development process differs from traditional desktop development;
- CO05: explain what strategies work best for Android development;
- CO06: explain what managers, developers, and testers need to look for when planning, developing, and testing a mobile application;
- CO07: explain how Android differs from other mobile technologies, and how developers can take advantages of these differences.

In addition, students will have:

- CO08: used Android SDK and ADT Bundle to develop and debug Android applications on the emulator and handsets;
- CO09: practiced strategies that work the best for Android development;
- CO10: gained significant experience with designing bulletproof Android applications for publication;

CO11: learned how to design robust user interfaces for mobile – specifically, for Android.

Topics:

- Mobile Application Frameworks
 - Android platform and how it differs from other mobile platforms
 - Android SDK and tools
- Mobile Application Basics
 - Design principles
 - Android application structures
 - Android resources
- Model View Controller (MVC) pattern in User Interface Design
 - Design of user interfaces
 - Common user interface controls and layouts
- Mobile Application Design Essentials
 - Storing persistent application data using preferences
 - Working with files, directories, and content providers
- Mobile Application Publishing and Distributing
 - Mobile software development process
 - Designing, planning, testing and publishing Android applications

The emphasis of the course is on the presentation, discussion, and utilization of emerging technologies in the applied computer science arena. Included in discussion is an exploration of the research upon which the technologies are based, the environmental context that led to the development of the technologies, and the current and projected impacts the technologies have in the applied computer science arena.

[Topic for this offering: Mobile Application Development] This course introduces students to application development for mobile devices. Students will learn essential concepts and practices at the core of modern mobile computing, including setting up the development environment, understanding the application lifecycle, user interface design, developing for different types of devices, and the mobile software process from design and development to testing and publication of commercial-grade applications. Even though the concepts covered in the course are platform independent, the course focuses on using Android as the development platform. Three lecture hours per week, plus programming work outside of class.

Text(s): (Required) *Android How to Program*, 2nd Edition. Paul Deitel, Abbey Deitel, Harvey Deitel, Pearson, 2015
ISBN-13: 978-0133764031

Software and Hardware:

- Windows 8/7 or Mac OS X
- Android Studio 1.0.2
- Android devices: Nexus 4 (phone), Nexus 7 (small tablet), and Nexus 10 (large tablet)

Class Attendance: (required)

Students are expected to attend all lecture sections and lab sections. Each student is responsible for all information; all course requirements, assignments and announcements missed (whether or not the student is present).

Final Grade:

| | |
|----------------------|-----|
| Homework Assignments | 20% |
| Projects | 40% |
| Final Examination | 40% |

Grading Criteria

| <u>SCORE</u> | <u>GRADE</u> | <u>SCORE</u> | <u>GRADE</u> |
|--------------|--------------|--------------|--------------|
| 93-100 | A | 73-76 | C |
| 90-92 | A- | 70-72 | C- |
| 87-89 | B+ | 67-69 | D+ |
| 83-86 | B | 63-66 | D |
| 80-82 | B- | 60-62 | D- |
| 77-79 | C+ | 0-59 | F |

Homework Assignments:

Assignments in this course include homework assignments. Your written homework assignments are to be prepared on a text- or document- processing application software and turned in electronically via the eLearning system (Canvas).

Android App Projects:

Assignments in this course also include Android App projects. Most of the projects must be done outside class. Detailed information of the projects can be found on the Projects page of the class website. You are urged to begin a project as soon as possible in order to avoid any possible bottleneck that occurs as the due date approaches. Your written project reports are to be prepared on a text- or document- processing system and turned in electronically via the eLearning system.

Quizzes:

There will be 4 to 5 quizzes given throughout the semester. In general, a quiz is given after a number of related topics have been covered. A quiz is given at the beginning or at the end of a class. An announcement about a quiz will be made in person or via class website at least one week in advance.

Final Exam:

There will be a comprehensive two-hour final examination. The final examination will be given on Wednesday, May 13, from 4:30PM to 6:30PM in room MH 210. The final exam covers all materials taught throughout the semester.

Missed Tests:

Unless arrangements are made in advance, there will be NO opportunity for making up a missed quiz/final exam. Please do not arrange any other activities on the posted final exam date.

Study Groups:

Although consulting with other students about assignments is permitted, you are to work alone on all homework assignments and programming projects except team projects (if applicable). All discussions about assignments should be limited to ideas about how to approach the problems and should never be the code that to be written. In other words, discussions should be in English (or a natural language of your choice) not in code. Therefore, any **submitted** work must be yours alone. This means that answers or code that you turn in for grading must be written by yourself, formulated from your own understanding of the material. Copying or paraphrasing the work of another student, or allowing another to copy or paraphrase your work, is unacceptable and will result in zero credit for all parties. This includes the situation when your solutions resemble those of another student's too closely.

Course Objective / Assessment Mechanism matrix

| | Test / Quiz Questions | Homework Problems | Projects | Group Projects |
|------|-----------------------|-------------------|----------|----------------|
| CO01 | ✓ | ✓ | ✓ | ✓ |
| CO02 | ✓ | ✓ | ✓ | ✓ |
| CO03 | ✓ | ✓ | | |
| CO04 | ✓ | ✓ | ✓ | ✓ |
| CO05 | | | ✓ | ✓ |
| CO06 | | | ✓ | ✓ |
| CO07 | | | ✓ | ✓ |
| CO08 | | | ✓ | ✓ |