Course Name: Mobile Software Development, Summer 2023
Course Number: CS 492
Credits: This course combines approximately 120 hours of instruction, on-line activities, exams, and assignments for 4 credits.
Instructor Info: Randy Scovil / randy.scovil@oregonstate.edu
Teaching Assistants’ names and contact info:
- TAs and Office Hours Information on Course Syllabus Page (in Canvas)

Learning Resources
We will be utilizing the free “Android Basics with Compose” curriculum produced by the Google Developer Relations team. No registration or purchase is necessary. https://developer.android.com/courses/android-basics-compose/course

Additional resource for the Kotlin language:
https://kotlinlang.org/

This course requires a development environment capable of performing developing Android apps. The course materials will be based on Android Studio (which is freely available for all major operating systems.)

Course Description
Introduction to concepts and techniques for developing mobile applications. Students will become familiar with modern mobile structure, implementation, development tools, and workflow.

Prerequisites:
CS 344.

Communication
1. Make sure to turn on Canvas Notifications for Announcements. The instructional team will be using Canvas Announcements extensively to communicate with you. It is your responsibility to keep up to date with these announcements and they are considered part of the required learning material.
2. Please post all course-related questions in the Ed Discussions forum so that the whole class may benefit from your conversation. Not all posts require a reply from the instructor/TA and often it is better for students to hash out an answer to a question.
3. Office hours will be held online through the class Microsoft Teams Team. To get started on Teams please go to https://is.oregonstate.edu/teams. Be sure to add the class-specific Teams – directions are in the first course Module.

4. Please email (do NOT use Canvas Messaging) your instructor only for matters of a personal or private (grading) nature. The instructor or a TA will reply to most course-related questions within 48 hours, though this may vary on weekends.

5. Any email sent to the instructor about this course must originate with an OSU supplied email account and contain the tag [CS492] at the beginning of the subject. Failure to comply with this will result in a delayed (or possibly nonexistent) response to your email.

6. We will strive to return your assignments and grades for course activities to you within 7 days of the due date. You can find a detailed communication policy as well as information on Team Office Hours on the Course Homepage.

**Canvas & Ed Discussions**

1. This course will be delivered via Canvas, and you will interact with your classmates and with your instructor through Ed Discussions. Within the course Canvas site, you will access the learning materials, such as the syllabus, modules, assignments, and exams. Class discussions will be on Ed Discussions.

2. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

3. Canvas is optimized for the most recent versions of most popular browsers. If your browser of choice is an out-of-date version, you should update it for use with Canvas, especially for exams. If you are having browser troubles, seek out the Technical Assistance described below.

4. If your primary device has trouble dealing with Canvas (e.g., as some tablets do), make sure that you have an alternative available for things like exams. If you are having device troubles, seek out the Technical Assistance described below. It is your responsibility to make sure that you have a trouble-free device before taking the exam.

5. General announcements for the class will be sent as emails through Canvas and posted as Canvas announcements. It is your responsibility to keep up with messages in Canvas Announcements and Inbox Messages.

**Technical Assistance**

If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Service Desk for assistance. You can call (541) 737-8787 or visit the IS Service Desk online.
**Course Learning Outcomes**

Upon completion of the course, students will have demonstrated the ability to:

1. Design and create applications on one or more modern mobile platforms.
2. Use mobile development tools, such as device emulators, for developing and testing applications.
3. Apply appropriate design principles to create an effective mobile application interface.
4. Employ elements of responsive design to create mobile applications that work on different screen sizes.
5. Use other apps on a mobile device to perform operations such as mapping and content sharing.
6. Employ different kinds of on-device data storage, such as preferences, on-device databases, and file-based storage.
7. Evaluate mobile application performance and apply appropriate optimization techniques to allow the application to scale.
8. Use analytics tools to understand in-app user behavior.

**Evaluation of Student Performance**

Final grades consist of the following weighted components:

- **Quizzes:** 5%
  - 8 quizzes total (Syllabus Quiz plus 7 unit quizzes.)

- **Assignments:** 65%
  - Assignment 1: 10%
  - Assignment 2: 10%
  - Assignment 3: 15%
  - Assignment 4: 15%
  - Assignment 5: 15%

- **Final Exam:** 30% (unproctored)
### Letter Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;= 93%</td>
</tr>
<tr>
<td>A-</td>
<td>&gt;= 90% &amp; &lt; 93%</td>
</tr>
<tr>
<td>B+</td>
<td>&gt;= 87% &amp; &lt; 90% (e.g., an 89.99% would be a B+)</td>
</tr>
<tr>
<td>B</td>
<td>&gt;= 83% &amp; &lt; 87%</td>
</tr>
<tr>
<td>B-</td>
<td>&gt;= 80% &amp; &lt; 83%</td>
</tr>
<tr>
<td>C+</td>
<td>&gt;= 77% &amp; &lt; 80%</td>
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<tr>
<td>C</td>
<td>&gt;= 73% &amp; &lt; 77%</td>
</tr>
<tr>
<td>C-</td>
<td>&gt;= 70% &amp; &lt; 73%</td>
</tr>
<tr>
<td>D+</td>
<td>&gt;= 67% &amp; &lt; 70%</td>
</tr>
<tr>
<td>D</td>
<td>&gt;= 63% &amp; &lt; 67%</td>
</tr>
<tr>
<td>D-</td>
<td>&gt;= 60% &amp; &lt; 63%</td>
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<tr>
<td>F</td>
<td>&lt; 60%</td>
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</tbody>
</table>

### Course Content

The course material is presented over the course of eight modules, each providing the knowledge needed to complete programming assignments geared towards the material covered.

The dates when modules and assignments will be released, and the due dates for the assignments are provided in the Course Schedule.

<table>
<thead>
<tr>
<th>Module</th>
<th>Topics</th>
<th>Module</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• Your first Android app</td>
<td>5</td>
<td>• Connect to the internet</td>
</tr>
<tr>
<td>2</td>
<td>• Building app UI</td>
<td>6</td>
<td>• Data Persistence</td>
</tr>
<tr>
<td>3</td>
<td>• Display lists and use Material Design</td>
<td>7</td>
<td>• WorkManager</td>
</tr>
<tr>
<td>4</td>
<td>• Navigation and app architecture</td>
<td>8</td>
<td>• Maps SDK and Firebase</td>
</tr>
</tbody>
</table>
Course Policies

Late Work Policy
All assignments must be submitted on Canvas, according to the posted due date and time.

Programming Assignments 1, 2, 3 and 4 will be accepted within 48 hours of the due date, with the following penalties
- Assignments submitted within 24 hours of the due date will be accepted with a penalty of 5% of the grade.
- Assignments submitted within 48 hours of the due date will be accepted with a penalty of 10% of the grade.
- Assignments submitted later than 48 hours of the due date will not be accepted without a documented medical or family emergency and will receive a grade of 0.

Note the late penalties are off of the total possible points, not the points you earn. E.g., if an assignment has 10 points, then a late submission within 24 hours of the due date will be deducted 0.5 points.

Programming Assignment 5, Quizzes and the Final Exam cannot be submitted later than the posted due date.

Makeup Exams
Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

Incompletes
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 70% of the points possible (in other words, usually everything but the final exam). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.

Academic Honesty
- Students are expected to do their own work. The only sources you’re allowed to use code from are the explorations, and no citation of this code is necessary. Direct use of any other resources is prohibited.
- Programming assignments present unique challenges for graders. It is often difficult for a grader to distinguish between legitimate help and plagiarism. We use plagiarism-detection software to check your code against the code from other students. It is quite sophisticated and can see through variable name changes and formatting differences.
• Honesty is essential for learning to take place. It will form the foundation of your professional integrity in your career.

• Specific Examples:
  • You **may** ask conceptual questions related to optimizing your code on Teams or Ed.
  • You are **encouraged** **to** discuss course content with other students, TAs, the instructor, or anyone else who will listen, including general discussion of homework assignments and how to fix specific issues.
  • You **may** share pseudocode and ideas about how to solve or approach problems. If you are getting odd error messages, you can share the snippet of code that is producing the message; do not share the entire file.
  • You **may not** post any complete functions/procedures/logic blocks to Teams or Ed.
  • You **must** write new, original programs, even if you are re-taking the course.
    • If you are retaking the course, you **must** generate new programming solutions (you **may not** re-use your own work from previous terms)
  • You **may not** copy anyone’s (or allow someone to copy your) solutions. It is possible to discuss problems without plagiarizing. One of the best methods of debugging is to explain your solution to someone else.
  • You **may not** post any exam questions or solutions in any form.
  • You **must** make any git repo you post this code on private, with the exception of the Portfolio assignment.

• If you are found in violation of any of the above policies, whether you are the giver or receiver of help, you will be subject to the University Academic Misconduct process. The first offense usually results in a warning and an assignment penalty (0-grade); the second offense can result in a disciplinary hearing, and possibly removal from the Program.

• The bottom line is: Each student is expected to understand all aspects of the programs they submit for credit.

• The following are examples of plagiarism, drawn from actual submitted and penalized cases.
  • Student Googled the problem and ended up finding a code written online. Student used the code there to improve their own work.
  • Student worked with a classmate, each tackling one half of the program. Both students modified the identifiers, labels, comments, etc...
  • Student found a solution to the problem online and changed a few variable names and methods and handed it as their own.

**Academic Integrity**

• The Code of Student Conduct prohibits Academic Misconduct and defines it as:
Any action that misrepresents a student or group’s work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the educational process.

- To support understanding of what can be included in this definition, the Code further classifies and describes examples of Academic Misconduct, including cheating, plagiarism, assisting and others. See the Code of Student Conduct for details.
- You are expected to do your own work and demonstrate academic integrity in every aspect of this course. Familiarize yourself with the standards set forth in the OSU Code of Student Conduct Section 4.2. You must only access sources and resources authorized by the instructor. You may not show your work to any other current or future students without the instructor’s authorization. Violations of these expectations or the Code of Student Conduct will be reported to the Office of Student Conduct and Community Standards. If there is any question about whether an act constitutes academic misconduct, it is your responsibility to seek clarification and approval from the instructor prior to acting.

**TurnItIn**

Your instructor may ask you to submit one or more of your writings to Turnitin, a plagiarism prevention service. Your assignment content will be checked for potential plagiarism against Internet sources, academic journal articles, and the papers of other OSU students, for common or borrowed content. Turnitin generates a report that highlights any potentially unoriginal text in your paper. The report may be submitted directly to your instructor, or your instructor may elect to have you submit initial drafts through Turnitin, and you will receive the report allowing you the opportunity to make adjustments and ensure that all source material has been properly cited. Papers you submit through Turnitin for this or any class will be added to the OSU Turnitin database and may be checked against other OSU paper submissions. You will retain all rights to your written work. For further information, visit Academic Integrity for Students: Turnitin – What is it?

**Statement Regarding Religious Accommodation**

Oregon State University is required to provide reasonable accommodations for employee and student sincerely held religious beliefs. It is incumbent on the student making the request to make the faculty member aware of the request as soon as possible prior to the need for the accommodation. See the Religious Accommodation Process for Students.

**Guidelines for a Productive and Effective Online Classroom**

(Adapted from Dr. Susan Shaw, Oregon State University)

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university’s regulations regarding civility. Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected.
In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

**Expectations for Student Conduct**

Student conduct is governed by the university’s policies, as explained in the Student Conduct Code (https://beav.es/codeofconduct). Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university’s regulations regarding civility.

**Personal Issues Conflicting with Course Progression**

Your advisors are excellent resources when significant personal issues conflict with your ability to progress in the course. Remember to keep them (and us) updated in these situations.

**Academic Calendar**

All students are subject to the registration and refund deadlines as stated in the Academic Calendar: https://registrar.oregonstate.edu/osu-academic-calendar

**Statement Regarding Students with Disabilities**

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval, please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.
Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations, please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Tutoring and Writing Assistance

TutorMe provides premium online tutoring for a number of subjects and can connect currently enrolled OSU Ecampus students with live tutors in under 30 seconds, 24 hours a day, seven days a week. TutorMe provides a virtual whiteboard, audio/video chat, screen-sharing, graphing calculators, and more. Access TutorMe from within your Canvas class by clicking TutorMe in the navigation pane.

For academic support provided to current College of Engineering students (which includes Computer Science students) see the College of Engineering Academic Support page.

The Oregon State Online Writing Suite is also available for students enrolled in Ecampus courses.

Ecampus Reach Out for Success

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it’s important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success.

Ecampus students are always encouraged to discuss issues that impact your academic success with the Ecampus Success Team. Email ecampus.success@oregonstate.edu to identify strategies and resources that can support you in your educational goals.

- **For mental health:**
  
  Learn about counseling and psychological resources for Ecampus students. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

- **For financial hardship:**
  
  Any student whose academic performance is impacted due to financial stress or the inability to afford groceries, housing, and other necessities for any reason is urged to contact the Director of Care for support (541-737-8748).
Establishing a Positive Community

It is important you feel safe and welcome in this course. If somebody is making discriminatory comments against you, sexually harassing you, or excluding you in other ways, contact the instructor, your academic advisor, and/or report what happened at https://studentlife.oregonstate.edu/studentconduct/reporting so we can connect you with resources.

Student Evaluation of Courses

Students receive notification, instructions and the link through their ONID when the online Student Evaluation of Teaching system opens to students. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the hybrid learning experience for future students. Responses are anonymous (unless a student chooses to “sign” their comments, agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.

Student Bill of Rights

Something OSU has twelve established student rights. They include due process in all university disciplinary processes, an equal opportunity to learn, and grading in accordance with the course syllabus: https://asosu.oregonstate.edu/advocacy/rights

Potential Updates to this Syllabus During the Course

Please note: The instructor reserves the right to make changes to this syllabus as needed. All changes will be communicated via email and/or Canvas announcements.