NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course Canvas site for enrolled students and may be more current than this sample syllabus.

Course Name: Mobile and Cloud Software Development

Course Number: CS 496

Credits: 4

Course Description
Introduction to the concepts and techniques for developing mobile and cloud applications.

Prerequisites: CS 344 or CS 311

Course Credits
This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Course Content
Cloud
The first portion of the class will focus on cloud development. This will cover the differences between a service and a product. Then you will design a cloud based application. In doing so you will learn about and have the opportunity to implement different aspects of cloud software development. This will focus on the way data is stored and the way it is accessed.

APIs
In the past you likely have interacted with an API provided either in software or on the web. In this portion of the class you will learn about API design and you will implement an API yourself that others would be able to use. This will be very tightly coupled with the cloud service you create.

Mobile Development
The third portion of the class will focus on mobile development. In this portion of the class you will learn about the various features that exists on most mobile platforms. You will then write a program that in some way leverages features made available by mobile platforms.

Prior Knowledge
File IO and Sockets
You may need to do a fair bit of work with an operating system. You should be comfortable with a IO stream and be able to save and load state from a file. You should also be comfortable communicating between processes using sockets.

Advanced Object Oriented Design
You should know when to use a class, when to subclass, what an abstract class is and how to use an abstract class. You will be working in a lot of complex systems that will expect you to be able to use these tools.

1 This course is offered through Oregon State University Extended Campus: http://ecampus.oregonstate.edu.
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Ability to Learn a new Language
There are currently no mobile platform or major cloud platforms whose primary language is C++. You will likely need to learn at least 2 new languages in this class. The emphasis of the material will not be on learning those new languages.

Problem solving
If a language does not provide you a tool to do something, but you need that tool to make progress, you should be comfortable making it yourself.

Organization and documentation
You should be able to look at a project and follow source code to figure out how it functions. You will likely have to deal with some larger software packages to implement some assignments in this class so you should be comfortable learning a large, unfamiliar collection of source code.

Things not on this list
This is not a comprehensive list, but it is a good start. If you don't know any of these topics, consider reviewing them before the class begins.

Learning Resources
- **Note to prospective students:** Please check with the OSU Bookstore for up-to-date information for the term you enroll ([OSU Bookstore Website](http://ecampus.oregonstate.edu) or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Class Tools
Code editor
- Amount of use: Extensive. Used for every homework.
- Expected knowledge: Extensive
- Coverage in class: None. You should be able to use a text based code editor well. Examples include Notepad++, Sublime Text, Emacs, Vim or TextWrangler

FTP Program
- Amount of use: Extensive. Used for many homeworks.
- Expected knowledge: Working knowledge
- Coverage in class: None. You should be able to upload files to your engr directory already. You should also know how to set permissions on those files.

Browser Based Debugging Tools
- Amount of use: Extensive. Used for every homework.
- Expected knowledge: None
- Coverage in class: Minimal. If you don't know how to debug HTML and JavaScript using Chrome Dev Tools or Firebug, take a few hours to find some guides to do so.
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SSH use
- Amount of use: Moderate. May be used in communicating with a mobile device or cloud servers.
- Expected knowledge: Working knowledge
- Coverage in class: Very limited. Expect that you know all of the basic Linux commands to navigate and interact with a file system.

Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

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 Help Desk for assistance. You can call (541) 737-8787 or visit the OSU IS Helpdesk online.

Evaluation of Student Performance
- Homework - 70%
- Final Project - 30%

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.

Expectations for Student Conduct
Student conduct is governed by the university’s policies, as explained in the Student Conduct Code.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

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OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:
   i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
   ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
   iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
   iv) TAMPERING - altering or interfering with evaluation instruments or documents.
   v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Tutoring

NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.