

Course Number	CS 221	Course Title	Introduction to Internet and Mobile Computing			
Semester Hours	4	Course Coordinator SP19	John Woods			
Catalog Description	Introduction to components, architecture and infrastructure of systems and services to support internet computing and mobile platforms. Linux/Unix systems and server-side infrastructure: tools, commands and scripting. Client-side interfaces and application development (Android and web), IDEs, debugging, utilizing resources and services. This course will have a strong hands-on component.					
Textbooks						
None, all instructional material is available online.						
References						
Course Learning Outcomes						
<ul style="list-style-type: none"> • Providing students with an introduction to Linux as a major server-side operating system in web programming. • Introducing students to mobile device application development. • Improving students' familiarity with the practical elements of software development, which should improve their programming skills for all higher level courses as well as their future careers. 						
Assessment of the Contribution to Student Outcomes						
Outcome →	1	2	3	4	5	6
Assessed →	X	X				
Prerequisites by Topic						
CS 202 with grade of C or better.						

Major Topics Covered in the Course

1. Introduction to internet computing (6 lectures)
 - Client-server architecture (thin client, servers, services, database connectivity, cloud computing etc.)
 - Infrastructure/operating systems (rationale for Linux/Unix and systems programming)
2. Introduction to the Linux/Unix environment (14 lectures)
 - Software installation and management
 - Linux command line and frequently used commands
 - Basic shell scripting
 - Editors: Emacs, Vi, etc.
 - The GNU Toolchain: GCC, GDB, Make, etc.
3. Android Client-Side Application Development (10 lectures)
 - Android platform architecture and Software Development Kit (SDK)
 - Using GUIs and custom views
 - Integrating content provider connections,
 - Understand bound and unbound services,
 - Notification alarms and managing Internet resources.
4. Android Web Development (10 lectures)
 - Targeting Screens from Web Apps
 - Building Web Apps in WebView
 - Debugging Web Apps
 - JQuery Mobile
 - Best Practices for Web Apps