

<b>Course #:</b>	<b>CSCI-C 151</b>
<b>Course Title:</b>	<b>Multiuser Operating Systems</b>
<b>Course Type:</b>	Required core
<b>Prerequisites:</b>	C101 Computer Programming I
<b>Credits:</b>	2
<b>Text Book:</b>	A Practical Guide to Linux, by M. Sobell.
<b>References:</b>	<ul style="list-style-type: none"> <li>• Handouts</li> <li>• <a href="#">RedHat Linux</a></li> <li>• <a href="#">A list of Linux-related "how to" documents for our labs</a></li> <li>• <a href="#">Linux commands</a></li> <li>• <a href="#">Linux reference</a></li> <li>• <a href="#">Linux history and reference</a></li> </ul>
<b>Current Catalog Description:</b>	Survey of the operating system facilities and commands. Installation and maintenance of operating systems such as Linux. Understanding process management, file systems, memory and virtual memory management issues. Understanding networking and its role in modern computing environment. Operating system security. Writing shell scripts and batch files.
<b>Course Goals</b>	<p>The student who completes this course:</p> <ol style="list-style-type: none"> <li>1. Will be able to understand and use a Unix operating system (at the level of knowledgeable to advanced Linux users)</li> <li>2. Will be able to understand and write small Unix shell programs.</li> <li>3. Will be able to perform basic Unix administration tasks (such as user management, process management, software installation, etc.).</li> <li>4. Will have working knowledge of Unix kernel, processes, file system, networking and web servers.</li> </ol>
<b>Major Topics Covered in the Course</b>	<ul style="list-style-type: none"> <li>• History and current state of Linux, distributions</li> <li>• Overview of the kernel, file structure, processes</li> <li>• Linux commands, operations, and available software</li> <li>• Writing shell scripts</li> <li>• Networking under Linux, overview of network protocols</li> <li>• Basic knowledge of web servers, creating a web directory and some web pages in their Linux account</li> <li>• Introduction to Linux administrative tasks, installation, user management, installing software packages</li> </ul>
<b>Laboratory projects (specify number of weeks on each)</b>	<p>Six laboratory projects, one class period each, meaning one week (1 or 2 hours spent in the lab).</p> <ul style="list-style-type: none"> <li>• Lab 1: Introduction to Linux, the desktop environment,</li> </ul>

	<p>some commands, and using pine for email.</p> <ul style="list-style-type: none"> <li>• Lab 2: Network protocols under Linux and using the GDB debugger for C++.</li> <li>• Lab 3: Writing and executing a shell script.</li> <li>• Lab 4: Writing a shell script including functions</li> <li>• Lab 5: Creating a web page containing the major html components</li> <li>• Lab 6: Introduction to some of the advanced software available under Linux: Open Office, the Gimp.</li> </ul>																		
<b>Estimate Curriculum Category Content (Semester hours)</b>	<table border="1"> <thead> <tr> <th>Area</th> <th>Core</th> <th>Advanced</th> </tr> </thead> <tbody> <tr> <td>Algorithms</td> <td>4</td> <td></td> </tr> <tr> <td>Software Design</td> <td>10</td> <td></td> </tr> <tr> <td>Comp. Arch.</td> <td>4</td> <td></td> </tr> <tr> <td>Data Structures</td> <td></td> <td></td> </tr> <tr> <td>Prog. Languages</td> <td>17</td> <td></td> </tr> </tbody> </table> <p>Additional hours may be dedicated to curriculum categories not listed above. For example explanation of concepts and theories. Discussion of social and ethical issues, discussion of inter personal relationships and working within groups.</p>	Area	Core	Advanced	Algorithms	4		Software Design	10		Comp. Arch.	4		Data Structures			Prog. Languages	17	
Area	Core	Advanced																	
Algorithms	4																		
Software Design	10																		
Comp. Arch.	4																		
Data Structures																			
Prog. Languages	17																		
<b>Oral and Written Communications</b>	Not an objective of the course.																		
<b>Social and Ethical Issues</b>	Issues of software license, the difference between commercial, public, and open source software, the GNU project and associated license, 30 minutes.																		
<b>Theoretical Content</b>	History of Linux, 1 hour. The difference between interpreted and compiled languages, 30 minutes.																		
<b>Problem Analysis</b>	Little to no coverage.																		
<b>Solution Design</b>	Little to no coverage.																		
<b>Prepared By</b>	Vrajitoru																		