CS 3030 Scripting Languages
Syllabus

General Information

Semester: Spring 2016
Textbook: None. We will use freely available resources from the Internet.
Location: Online
Instructor Info: Ted Cowan
tedcowan@weber.edu
(801) 957-4769 (office @SLCC Redwood)
Office hours @SLCC Redwood, Technology Building, First Floor, Room 133. To schedule me when I am available, access https://webercsatslcc.youcanbook.me.
Website: https://weber.instructure.com/courses/388844

Objectives of This Course

From the catalog: This course addresses the design of scripting languages and their applications. Scripting languages can be used to manipulate text and data using subtle and complex coding to automate many tasks. Students will learn to write simple scripts to automate system administration tasks using appropriate languages. This course explores the nature of scripting, the role of scripting languages, introduces some of the popular scripting languages and their applications, and provides skills in scripting language design.

Upon successful completion of this course, students should be able to:

- Show examples of scripting languages and command interpreters
- Identify good candidate administrative functions for scripting
- Understand the benefits and challenges of scripting
- Demonstrate basic scripting in the Linux/Unix environment
- Use the vi(m) text editor to perform basic text editing functions
- Identify basic syntax and language elements of a Bash script and write a complete Bash script to automate common administrative functions
- Use man pages and the Internet as documentation for Linux/Unix command-line programs
- Use regular expressions to search text files
- Identify basic syntax and language elements of a Python script and write a complete Python script to automate common administrative functions
- Use the module mechanism to add functionality to a Python script
- Read and write files and databases and generate test data in a Python script
- Identify basic syntax and language elements of a Perl script and write a complete Perl script to automate common administrative functions
- Create a simple Linux/Unix filter in Perl
- Communicate over the Internet using Sockets in Perl
- Parse input using Perl
- Create a simple CGI script in Perl
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Students with Disabilities

Students who have special needs or disabilities that may affect their ability to access information and/or material presented in this course are encouraged to access http://www.weber.edu/ssd/ssdPP00_registering.html to register with the WSU SSD.

Allotted Time

You should anticipate spending two to three hours of study per week for each credit hour of a university course. Computer and programming classes typically require time in the upper range.

Grading

Your final grade will be determined from your performance in the following areas:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Lab Assignments</td>
<td>65%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Final</td>
<td>20%</td>
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</tbody>
</table>

Class Format

A reading assignment and a short lecture video will be posted in each learning module. Each student is expected to watch the video and read the assigned reading material prior to completing the associated lab work and taking the quiz. Questions about the lab, reading material or video may be asked in the Instructor’s Blog in Canvas.

Honesty

CS Department policy dictates that any verifiable evidence of student academic cheating, as defined and determined by the instructor, will result in: 1) an automatic failing grade for the class and 2) a report to the Dean of Students that will include the student's name and a description of the student's dishonest conduct. Cheating is defined in the Weber State University Policies and Procedures Manual located at http://www.weber.edu/ppm/Policies/6-22_StudentCode.html.

Anyone determined to have copied another student's lab assignment, quiz or test will receive a failing grade for the semester. Please do your own work. You may study together but lab assignments, quizzes and tests are to be completed individually and not as a group. Please do not distribute or post solutions to lab assignments or the content of any quiz or test on the Internet.

Homework

Please complete the reading and video assignment prior to class. A schedule of reading and lab assignments can be found below. All assignments are to be submitted for grading to the student’s account on the WSU CS Linux server icarus. Icarus is accessible from anywhere on the Internet using an SSH client such as PuTTY (more about PuTTY in Lab 1).
Assignments

Lab assignments will be given during the semester. The lab assignments are typically short and should help you to learn Unix/Linux scripting one task at a time. All lab assignments will be tested and passed off on the lab Linux server icarus.

You will turn in your lab assignments by marking the assignment complete in Canvas. Don’t upload any files to Canvas; just mark the lab assignment complete. Your source code must be executable in your ~/cs3030/lab* folder. In your source code please include (1) your name (2) the lab number, (3) a description of the lab (use the same text I put on the website) and (4) our course number (CS 3030). If you do not mark the assignment as complete, you will receive a zero for the assignment.

Grading: I will execute your lab assignment on Icarus while masquerading as you and ensure that the output of your lab complies with the assignment. If your lab runs without errors and produce the proper output, you will receive full credit for the assignment. If significant features are missing or bugs are found, you will receive a lower score based on the severity of the error. Naming of files is critical to grading so please name your folders and files exactly as specified in the lab description and ensure that your script is executable. See each lab assignment for more information. I reserve the right to give you a zero for the assignment if you do not follow the naming instructions to the letter when I grade that particular assignment.

Because life happens, I will drop your lowest lab assignment score.

Lab assignments are due on the date listed in Canvas. Please refer to the Learning Modules, the Syllabus or the Calendar in Canvas for actual lab assignment due dates. The dates in this syllabus are guidelines only and are subject to change to meet the needs of the class.

Quizzes

Quizzes are due on the days listed in Canvas and based on the material in the associated Lab. Quizzes may consist of multiple choice, true/false and short answer questions. Your lowest quiz score will be dropped. Quizzes are open book and open note but closed neighbor. You are on the honor system. Quizzes cannot be turned in late. Each quiz is timed; you have one hour once you begin to complete it. Because some students are better programmers than quiz takers, you may take each quiz up to twice each.

Exam

A Final exam will be administered during Finals Week and due on the day listed in Canvas. The exam is based on multiple-choice, true/false or short answer-type questions. The exam is closed book, closed Internet and closed neighbor and conducted either at a WSU Testing Center or with a pre-approved proctor. If the proctor assesses any fees, the student is fully responsible for payment.

Grading Scale
The grading scale will be as follows:

- 100-94% = A
- 93.9-90% = A-
- 90.9-87% = B+
- 86.9-84% = B
- 83.9-80% = B-
- 79.9-77% = C+
- 76.9-74% = C
- 73.9-70% = C-
- 69.9-67% = D+
- 66.9-64% = D
- 63.9-60% = D-
- below 60% = E

Miscellaneous

The instructor reserves the right to amend the course schedule, or study material, or to add or subtract lab assignments, quizzes or examinations to best meet the needs of the class.

Your instructor maintains office hours at his office at the SLCC Redwood Road campus during the semester. See the Instructor Info section at the top of this syllabus for directions and instructions.

No extra credit will be offered for this class.

Quizzes and Lab assignments may not be turned in late for credit.

A grade of Incomplete will be given only in extreme circumstances.
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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan 11</td>
<td>Introduction to Scripting Modules 1 and 2</td>
<td>Lab 1</td>
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<td>2</td>
<td>Jan 18</td>
<td>UNIX/Linux Tools and BASH Basics Module 2</td>
<td>Lab 2</td>
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<td>3</td>
<td>Jan 25</td>
<td>Regular Expression and Web Page Creation Module 3</td>
<td>Lab 3</td>
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<td>4</td>
<td>Feb 1</td>
<td>Introduction to Python Module 4</td>
<td>Lab 4</td>
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<td>5</td>
<td>Feb 8</td>
<td>Python Labs, Strings, Lists and Tuples Module 5</td>
<td>Lab 5</td>
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<td>6</td>
<td>Feb 15</td>
<td>Python Labs, Strings, Lists and Tuples</td>
<td>Lab 5</td>
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<td>7</td>
<td>Feb 22</td>
<td>Python Dictionaries, File I/O and shlex Module 6</td>
<td>Lab 6</td>
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<tr>
<td>8</td>
<td>Feb 29</td>
<td>Python Dictionaries, File I/O and shlex</td>
<td>Lab 6</td>
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<td>9</td>
<td>Mar 7</td>
<td>SPRING BREAK</td>
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<td>10</td>
<td>Mar 14</td>
<td>Introduction to PERL Module 7</td>
<td>Lab 7</td>
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<td>11</td>
<td>Mar 21</td>
<td>Introduction to PERL Module 7</td>
<td>Lab 7</td>
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<td>12</td>
<td>Mar 28</td>
<td>PERL Interprocess Communication Module 8</td>
<td>Lab 8</td>
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<td>13</td>
<td>Apr 4</td>
<td>PERL Interprocess Communication Module 8</td>
<td>Lab 8</td>
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<td>14</td>
<td>Apr 11</td>
<td>PERL CGI Module 9</td>
<td>Lab 9</td>
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<td>15</td>
<td>Apr 18</td>
<td>PERL CGI Module 9</td>
<td>Lab 9</td>
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<td>16</td>
<td>Apr 25</td>
<td>Final Exam</td>
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