University of Wisconsin-Milwaukee
Department of Health Informatics and Administration

HCA 741: Essential Programming for Health Informatics
Course Syllabus

Instructor: Rohit Kate
Email: katerj@uwm.edu
Office: NWQB 6473
Phone: (414) 229-4216

Credit: 3 Credits

Course Overview: This course will give students essential programming knowledge and skills to perform commonly encountered computational tasks in the field of biomedical and health informatics as well as enable them to work on future computational projects. The first part of the course will be an introduction to a programming language, Python, which will be used in rest of the course. Next, the course will cover designing, implementing and analyzing programs to process some widely used medical data resources, for example, SEER, ICD, UMLS, CDC etc., in order to perform useful medical informatics tasks. This will be followed by programs to perform some important computational tasks in health informatics, for example, autocoding and data de-identification. Students will also have the opportunity to define their own computational tasks and write programs to accomplish them in the form of their final project.

Course Objectives:
1. Students will learn a programming language
2. Students will develop the ability to apply programming knowledge for performing computational tasks in health informatics

Textbooks

Prerequisite: Graduate standing or consent of the instructor is required. Background in programming is not required.

Grading
Weekly programming assignments: 60%
Weekly Quizzes on D2L: 15%
Final project: 25%

Late submission policy: No credit will be given for late submissions except for documented serious illness or family emergency reasons.
Grading Scale

A  >=95
A- >=90 and <95
B+ >=85 and <90
B  >=83 and <85
B- >=80 and <83
C+ >=75 and <80
C  >=73 and <75
C- >=70 and <73
D+ >=65 and <70
D  >=63 and <65
D- >=60 and <63
F  < 60

Syllabus & Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computers and Programs</td>
<td>Text 1 Chapter 1, Text 2 Preface</td>
</tr>
<tr>
<td>2</td>
<td>Writing Simple Programs</td>
<td>Text 1 Chapter 2</td>
</tr>
<tr>
<td>3</td>
<td>Computing with Numbers</td>
<td>Text 1 Chapter 3</td>
</tr>
<tr>
<td>4</td>
<td>Sequences: Strings, Lists and Files</td>
<td>Text 1 Chapter 5</td>
</tr>
<tr>
<td>5</td>
<td>Functions</td>
<td>Text 1 Chapter 6</td>
</tr>
<tr>
<td>6</td>
<td>Decision Structures</td>
<td>Text 1 Chapter 7</td>
</tr>
<tr>
<td>7</td>
<td>Loop Structures and Booleans; Lists</td>
<td>Text 1 Chapter 8</td>
</tr>
<tr>
<td>8</td>
<td>Lists and Dictionaries</td>
<td>Text 1 Chapter 11</td>
</tr>
<tr>
<td>9</td>
<td>Regular Expressions</td>
<td>Will be provided</td>
</tr>
<tr>
<td>10</td>
<td>Programming with ICD</td>
<td>Text 2 Chapters 6</td>
</tr>
<tr>
<td>11</td>
<td>Programming with SEER Dataset</td>
<td>Text 2 Chapters 7</td>
</tr>
<tr>
<td>12</td>
<td>Programming with SEER Dataset</td>
<td>Text 2 Chapters 20 &amp; 25</td>
</tr>
<tr>
<td>13</td>
<td>Programming with CDC Dataset</td>
<td>Text 2 Chapters 13, 19 &amp; 24</td>
</tr>
<tr>
<td>14</td>
<td>Autocoding and Deidentification</td>
<td>Text 2 Chapter 14 &amp; 15</td>
</tr>
<tr>
<td>15</td>
<td>Site-Specific Tumors; Precancers and Cancers</td>
<td>Text 2 Chapters 27</td>
</tr>
</tbody>
</table>

University Course Policy:

College of Health Sciences Honor Code:
http://uwm.edu/healthsciences/students/honor-code/