# CS 4320: Machine Learning

## Spring 2019 Schedule

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Reading</th>
<th>Work Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 7</td>
<td>W01 Introduction to Machine Learning</td>
<td>Chapter 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Loading and Visualizing Data</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Pre-processing Data</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Training Models</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Tuning Models</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Evaluating Models</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01 Deploying Models</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W01</td>
<td></td>
<td>Assignment 1</td>
</tr>
<tr>
<td>Jan 14</td>
<td>W02 Cross-Validation</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W02</td>
<td></td>
<td>Assignment 2</td>
</tr>
<tr>
<td>H Jan. 21</td>
<td>Martin Luther King Jr. Day (no classes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W03</td>
<td>W03 Classification</td>
<td>Chapter 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W03 Performance Measures/Confusion Matrix</td>
<td>Chapter 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W03 Error Analysis</td>
<td>Chapter 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W03</td>
<td></td>
<td>Assignment 3</td>
</tr>
<tr>
<td>Jan 28</td>
<td>W04 Linear Regression</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W04 Gradient Descent</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W04 Learning Curves</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W04 Regularization</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W04 Logistic Regression</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W04</td>
<td></td>
<td>Assignment 4</td>
</tr>
<tr>
<td>Feb 4</td>
<td>W05 Support Vector Machines</td>
<td>Chapter 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W05 Linear SVM Classification</td>
<td>Chapter 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W05 Nonlinear SVM Classification</td>
<td>Chapter 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W05 SVM Regression</td>
<td>Chapter 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W05</td>
<td></td>
<td>Assignment 5</td>
</tr>
<tr>
<td>Feb 11</td>
<td>W06 Decision Trees</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W06 CART</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W06 Gini and Entropy</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W06 ID3/C4.5</td>
<td>Papers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W06</td>
<td></td>
<td>Assignment 6</td>
</tr>
<tr>
<td>H Feb. 18</td>
<td>President’s Day (no classes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W07</td>
<td>W07 Midterm Examination</td>
<td></td>
<td>Midterm Examination</td>
</tr>
<tr>
<td></td>
<td>W07 Ensembles</td>
<td>Chapter 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W07 Forests</td>
<td>Chapter 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W07 Boosting</td>
<td>Chapter 7</td>
<td></td>
</tr>
<tr>
<td>Feb 25</td>
<td>W08 Dimensionality Reduction</td>
<td>Chapter 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W08 Principle Component Analysis</td>
<td>Chapter 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W08</td>
<td></td>
<td>Assignment 7</td>
</tr>
<tr>
<td>Mar 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 11-15</td>
<td>Spring Break (no classes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 18</td>
<td>Assignment 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 25</td>
<td>Assignment 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 1</td>
<td>Assignment 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 8</td>
<td>Assignment 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 15</td>
<td>Assignment 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 22</td>
<td>Assignment 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 24</td>
<td>Last Day of Classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 25</td>
<td>Reading Day (no classes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 26-May</td>
<td>Final Exams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W May 1</td>
<td>Final Exam 09:00 am - 10:50 am</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Class announcements may modify schedule from that listed above.