CMPS 4450
Data Mining and Visualization

Instructor: Dr. Chengwei Lei
Office: Science III 339
Office Hours: M/T/W 2:30-3:59 PM, or by appointment
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E-mail: clei@csub.edu

Course description: This course covers the fundamentals of data science. Topics include data collection, preprocessing and transformation, visualization and exploratory analysis, and the mathematical and statistical foundations for data modeling, as well as introductions to data mining algorithms.

Text: Machine Learning by Tom Mitchell
Data Science from Scratch First Principles with Python by Joel Grus

Course material
*THE INSTRUCTOR RESERVES THE RIGHT TO CHANGE THE ORDER AND TIME SPENT ON ANY PORTION OF THIS SYLLABUS

Topic

Introduction
Numpy, Stats and Prob, linear algebra
Data in/out, Cleaning, Transformation
Tools tutorial & basic plotting
Regression
Classification
Clustering
Networks
Collaboration policy

For homework assignments, you are encouraged to discuss course concepts related to the assignments. However, graded assignments in this course should be completed individually.

Semester Mark

<table>
<thead>
<tr>
<th>Semester Grade</th>
<th>Semester Mark</th>
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<tbody>
<tr>
<td>90 – 100</td>
<td>A</td>
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<tr>
<td>80 – 89</td>
<td>B</td>
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<td>70 – 79</td>
<td>C</td>
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<td>60 – 69</td>
<td>D</td>
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<tr>
<td>0 - 59</td>
<td>F</td>
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Attendance Policy

Students are responsible for their own attendance. The topics covered in lecture will be listed on the course website. Lab attendance is not required but is strongly encouraged.

Semester Grade

<table>
<thead>
<tr>
<th>Average of Regular Semester Exams</th>
<th>30%</th>
<th>Regular Exams</th>
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<tbody>
<tr>
<td>Homework &amp; Labs</td>
<td>40%</td>
<td>As determined by instructor</td>
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<tr>
<td>Final Project</td>
<td>30%</td>
<td>Final Project and presentation</td>
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Notes:
1. Each assignment is due at the specified date at the specified time. Late submissions will be accepted at a penalty of 20% for each day the assignment is late.
2. There will be three (2) one-hour in-class tests and a two-hour comprehensive final exam. No makeup test will be given without compelling justification.
3. For purposes of ABET Accreditation Assessment, the instructor reserves the right to retain copies of any submitted student work.

Classroom Behavior

- All cell phones and electronic devices should be in silent mode
- No food or drinks are allowed in the classroom
- Respect and courtesy to one another are expected at all times