MATH 4381 – Advanced Topics in Applied Statistics: Introduction to Data Science

Instructor: Jack Follis
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Email: follisj@stthom.edu

OFFICE HOURS: M 10pm – 3pm, 4:30pm – 5:30pm
T 10:00am – 11:00am, 12pm – 1:00pm
W 12pm-3pm
Th 10:00am – 11:00am

Course Description: This course will focus on the basic concepts of data science, including data visualization, data management/wrangling, and computational statistics and machine learning. This will class will focus on discussions and presentations by the students.

Course Objectives:
Upon completion of this course, students will be able to:
- Identify the strengths and/or weaknesses simple data visualizations
- Identify important factors for an effective visualization of data.
- Use the appropriate software to generate visualizations
- Manipulate data in datasets
- Merge and clean datasets from multiple sources

Course Outline:
The outline below is tentative; it may change in the event of circumstances beyond the instructor’s control.

1. Overview & introduction to R and RStudio
2. Data Visualization
3. Data Management/Wrangling
4. Computational Statistics
5. Machine Learning
6. Special Topics

Grade in Course: Projects 50%
Assignments 20%
Final Project 30%
**GRADING SCALE:** In this class the final course grades will be determined using the following grade scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<th>Range</th>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93.0-100</td>
<td>A-</td>
<td>90-92.9</td>
<td>B</td>
<td>87.0-89.9</td>
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<tr>
<td>B+</td>
<td>87.0-89.9</td>
<td>B</td>
<td>83-86.9</td>
<td>B-</td>
<td>80-82.9</td>
</tr>
<tr>
<td>C+</td>
<td>87.0-79.9</td>
<td>C</td>
<td>73-76.9</td>
<td>C-</td>
<td>70-72.9</td>
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<tr>
<td>D+</td>
<td>67.0-69.9</td>
<td>D</td>
<td>60-66.9</td>
<td>F</td>
<td>&lt; 60</td>
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</tbody>
</table>

**Policy on Academic Dishonesty**  
(Taken from the 2010-2011 Undergraduate Catalog)

Every offense against academic honesty seriously undermines the teaching-learning process for which the University exists, and such offenses will be dealt with expeditiously according to the following criteria.

**Definition**

Academic dishonesty includes but is not limited to:

1. Cheating on an examination or test; for example, by copying from another’s paper or using unauthorized materials before or during the test;
2. Plagiarism, which represents as one’s own the work of another, whether published, without acknowledging the precise source;
3. Knowing participation in the academic dishonesty of another student, even though one’s own work is not directly affected;
4. Any conduct which reasonable people in similar circumstances would recognize as dishonest in an academic setting.

**Penalty**

The penalty for an incident of academic dishonesty is, at the discretion of the faculty member, either a mark of zero for the work in question or a grade of F for the course.

**Disabilities**

Any student with a disability requiring accommodations in this course is encouraged to contact me after class or during office hours. Additionally, students will need to contact Counseling and Disability Services in Crooker Center.  
This office can be reached at (713) 525-2169 or 6953

**DROPPING THE COURSE:** If you decide you do not wish to continue the course, it is your responsibility to go through the proper channels and officially drop the course.

**Tutorial Services**

Students needing extra assistance with course concepts may also visit the Tutorial Services Center and/or ust.asconline.net.