

# Analyze a University's Assessment System for Alignment with Curriculum

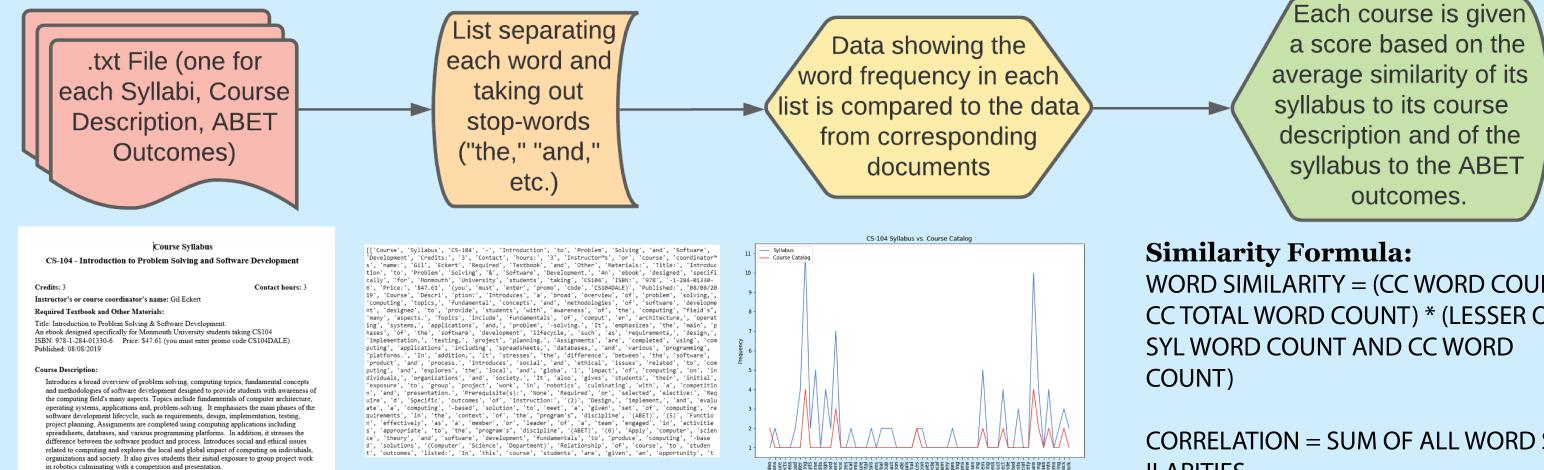
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## Project Goal:

Our goal was to compare course syllabi with course catalog descriptions and ABET Computer Science Accreditation Outcomes to determine the level of similarity between them. ABET accreditation is important to the Computer Science and Software Engineering programs at Monmouth University. Graduates from ABET accredited programs are looked upon more favorably by potential employers than graduates from programs that are not accredited.

**ABET**

## Process (repeated for every syllabus and course description):



## Similarity Formula:

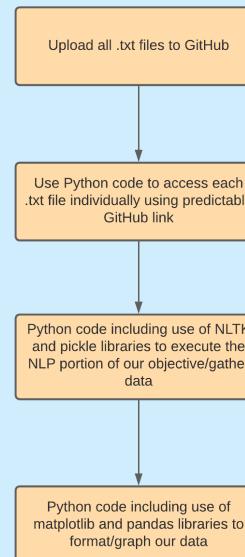
WORD SIMILARITY =  $(CC \text{ WORD COUNT} / CC \text{ TOTAL WORD COUNT}) * (\text{LESSER OF SYL WORD COUNT AND CC WORD COUNT})$

CORRELATION = SUM OF ALL WORD SIMILARITIES

## Technologies:

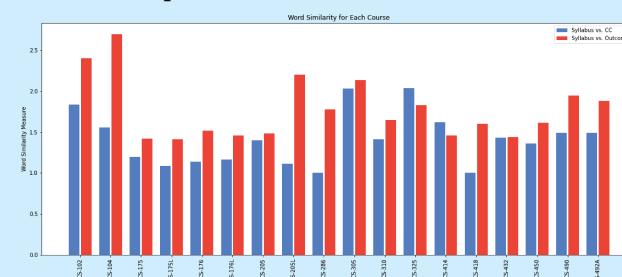
The concept of analyzing documents with programming is called Natural Language Processing (NLP). NLP involves separating each document into “bags” of individual words and gathering data to be used for comparison. We used Python’s NLTK library for the NLP portion, and the matplotlib and pandas libraries for graphing our data. To display our code in a readable fashion, we created a Jupyter Notebook. Our GitHub repo/Jupyter Notebook explain our code more in-depth:

GitHub:

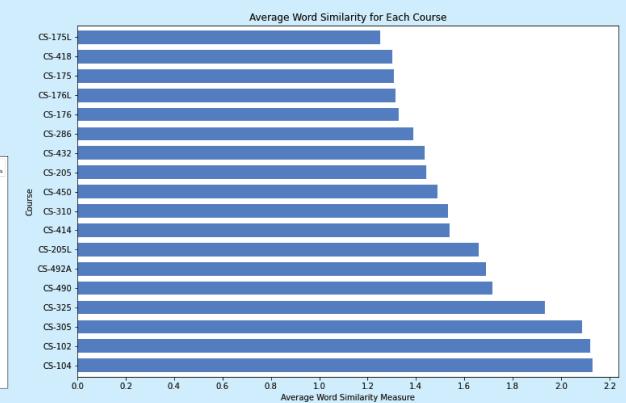


## Results:

The chart below shows the similarity correlation of each Syllabus to its respective Course Description and the ABET Outcomes.



Our research suggests that courses with a higher similarity correlation may be more closely-aligned with CS-SE curriculum.



The chart above averages the similarity correlations of the Course Description vs. Syllabus and of the ABET Outcomes vs. Syllabus