

```
In [5]: import pandas as pd
import matplotlib.pyplot as plt

# Load the dataset
file_path = 'SF.csv' # Update this to the correct path
data = pd.read_csv(file_path)

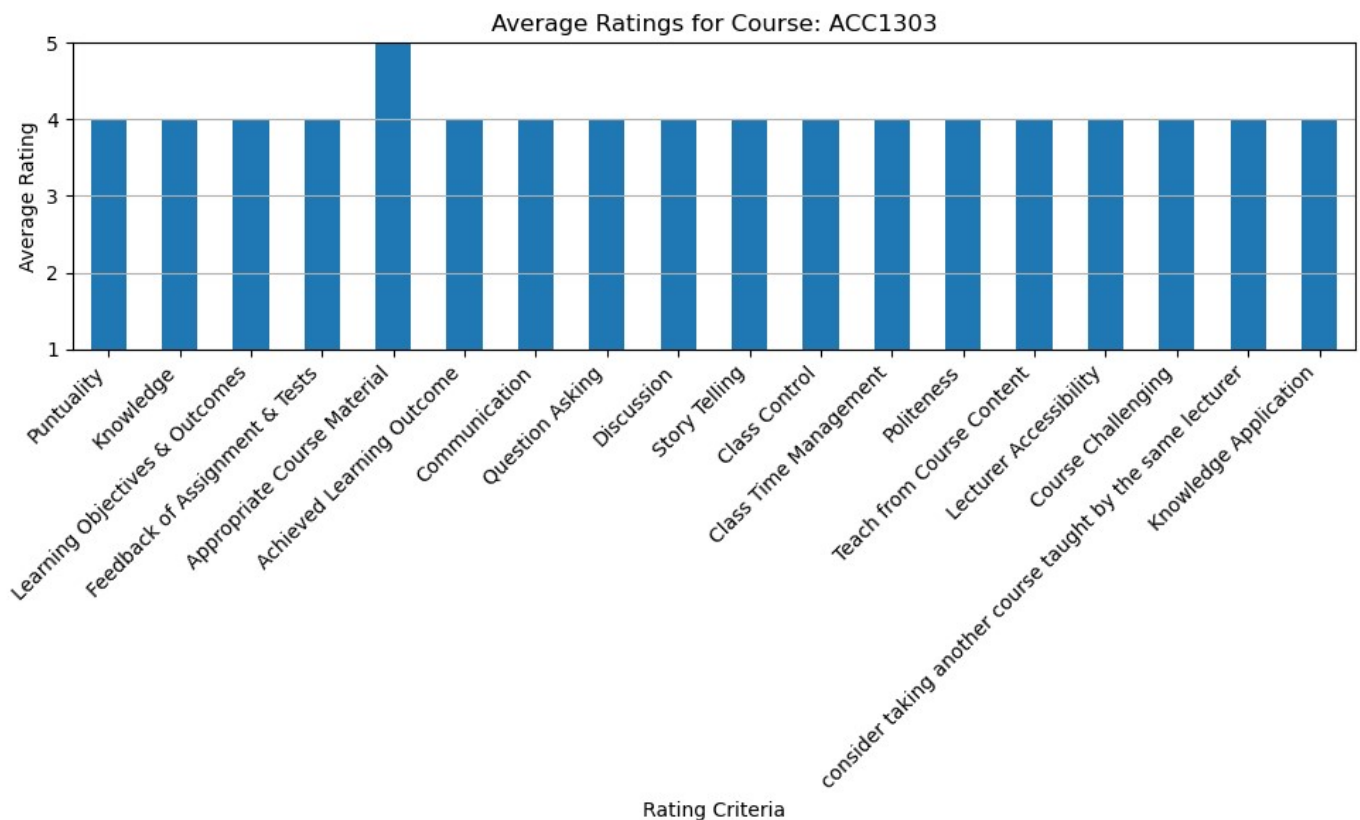
# Define the columns containing the ratings (D to W)
rating_columns = data.columns[3:23]

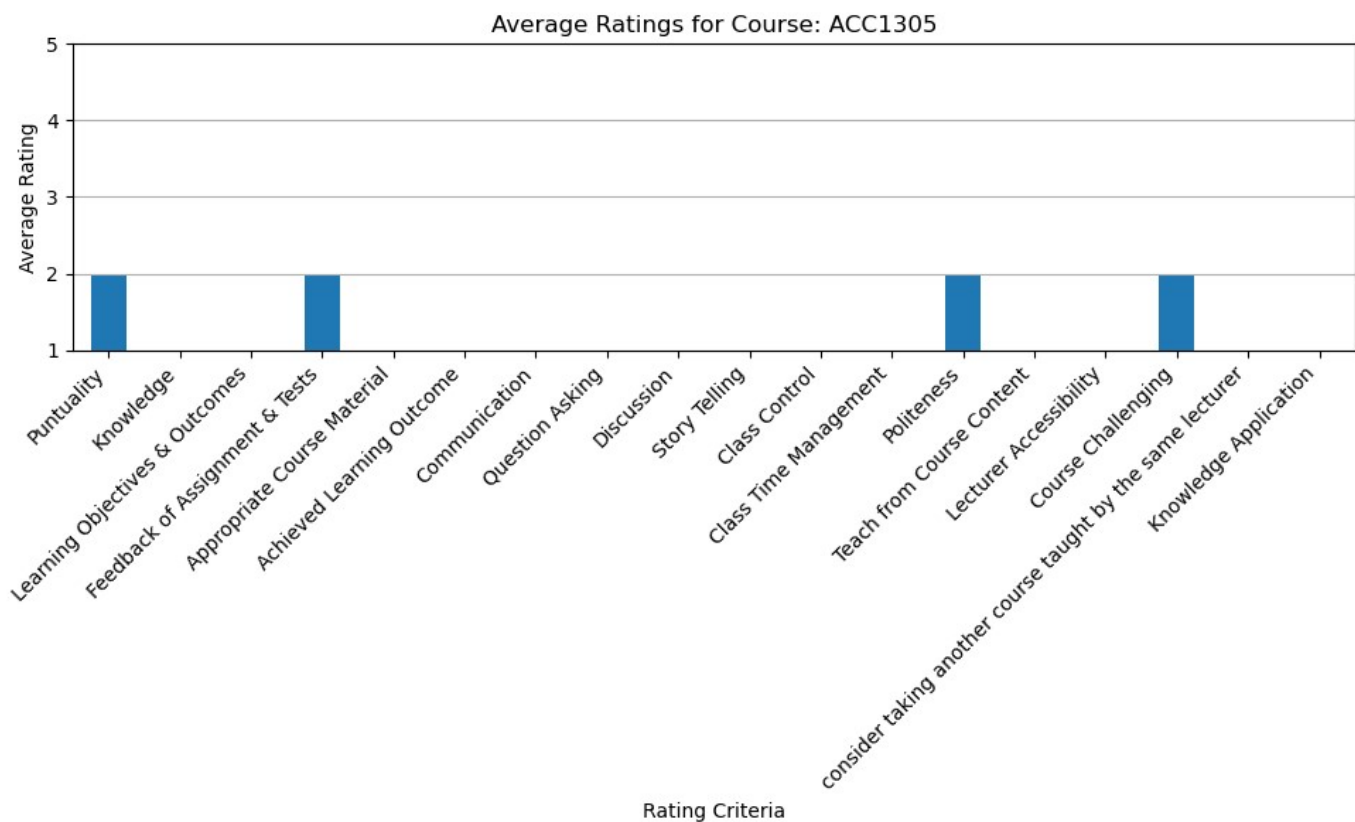
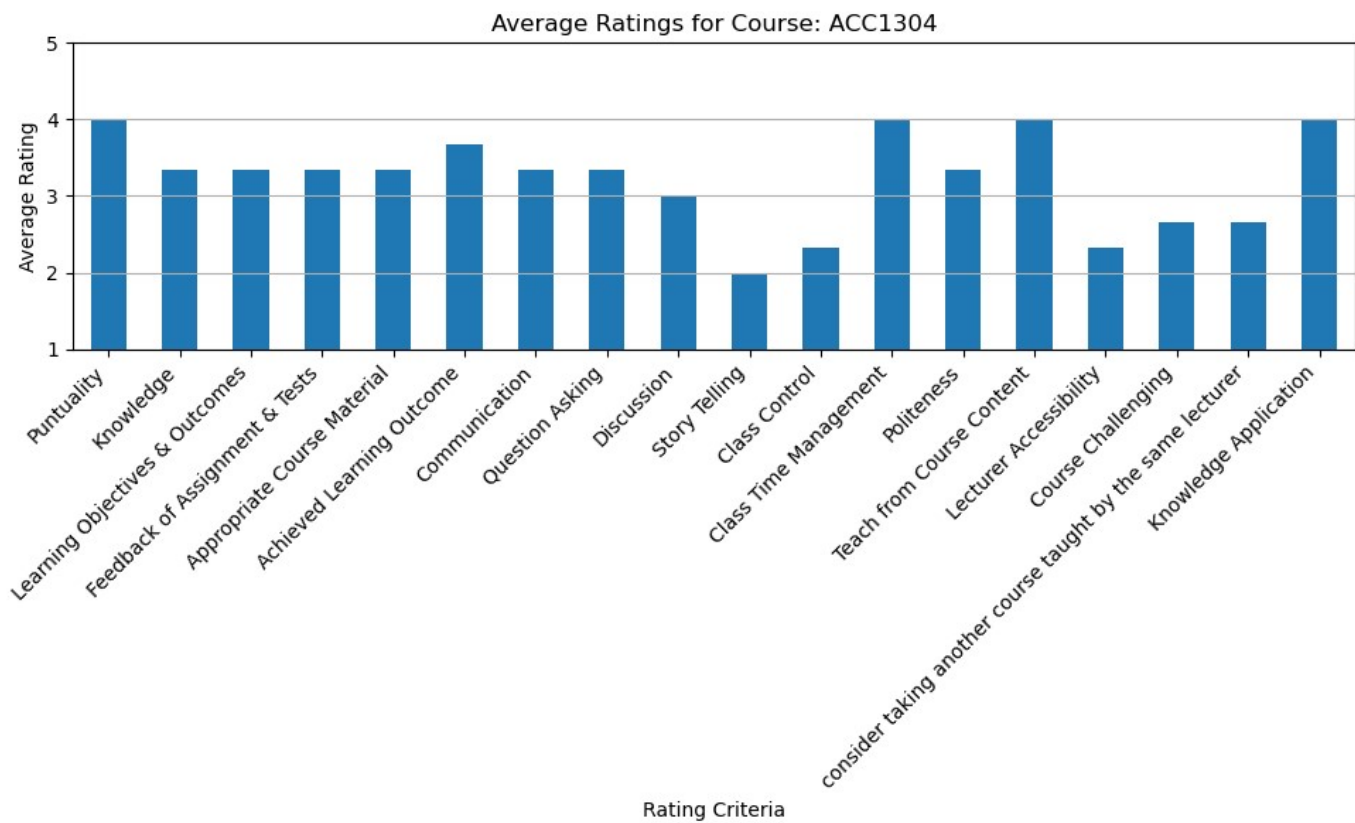
# Group by CourseCode and calculate the mean of each rating column
mean_ratings_by_course = data.groupby('CourseCode')[rating_columns].mean()

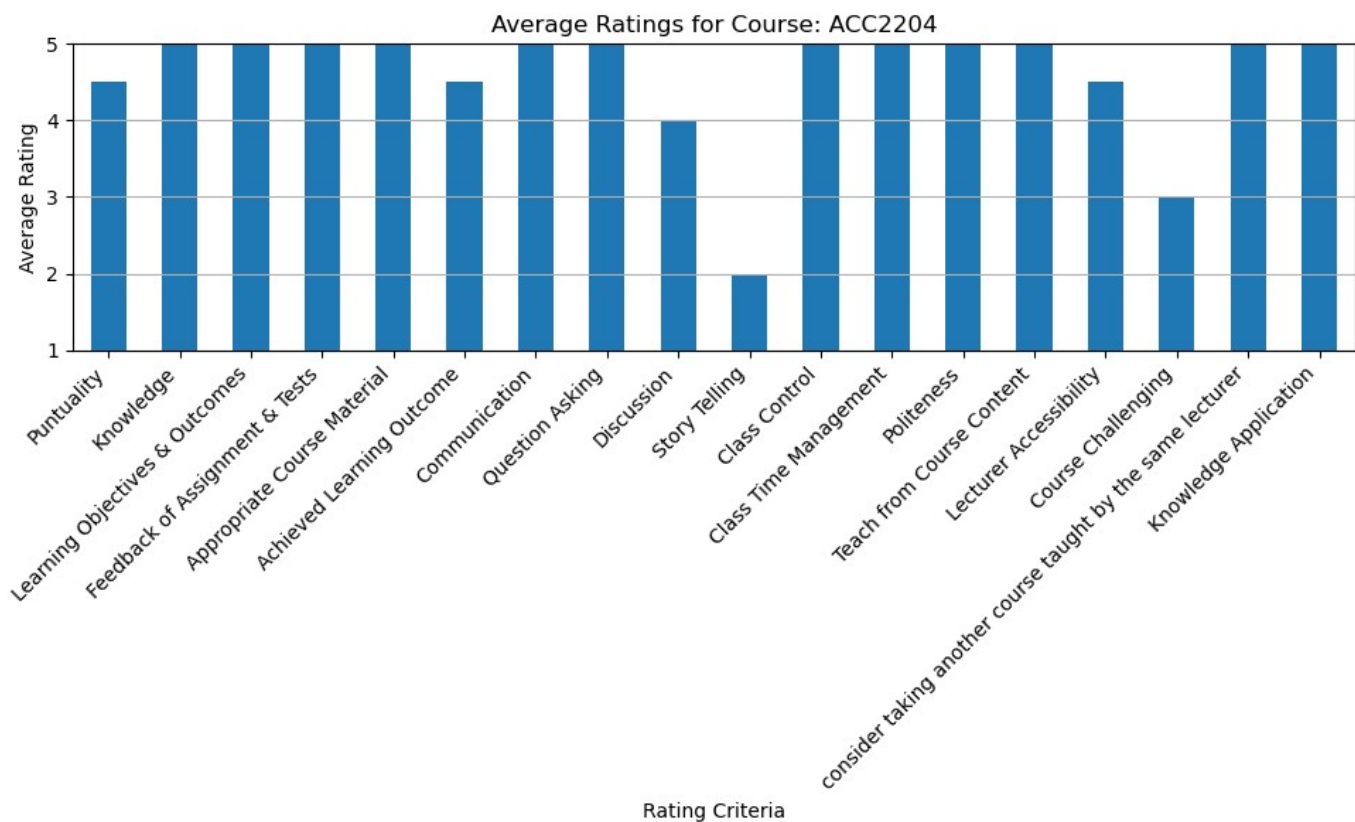
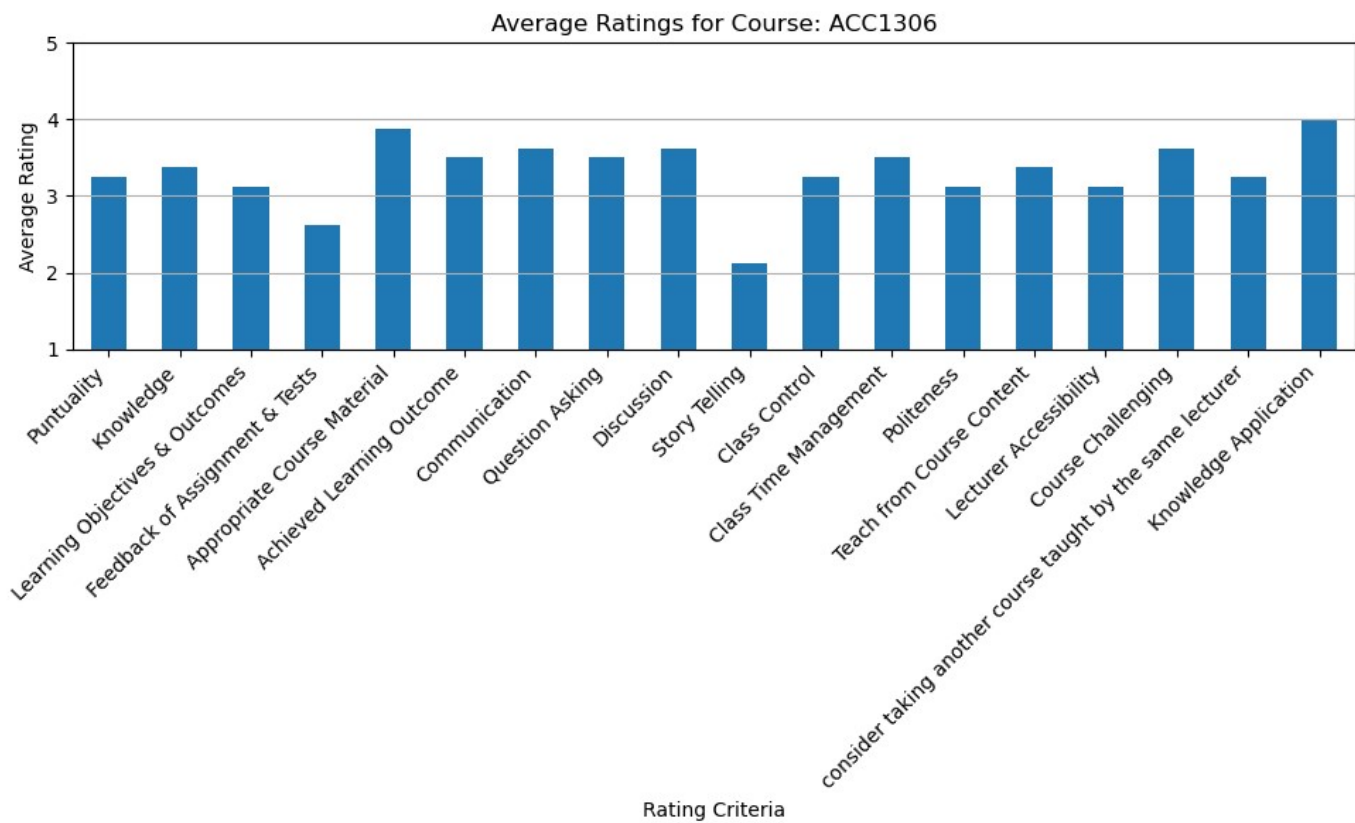
# Plot the ratings for each course
for course in mean_ratings_by_course.index:
    mean_ratings = mean_ratings_by_course.loc[course]
    plt.figure(figsize=(10, 6))
    mean_ratings.plot(kind='bar')
    plt.title(f'Average Ratings for Course: {course}')
    plt.ylabel('Average Rating')
    plt.ylim(1, 5)
    plt.xlabel('Rating Criteria')
    plt.xticks(rotation=45, ha='right')
    plt.grid(axis='y')
    plt.tight_layout()
    plt.show()
```

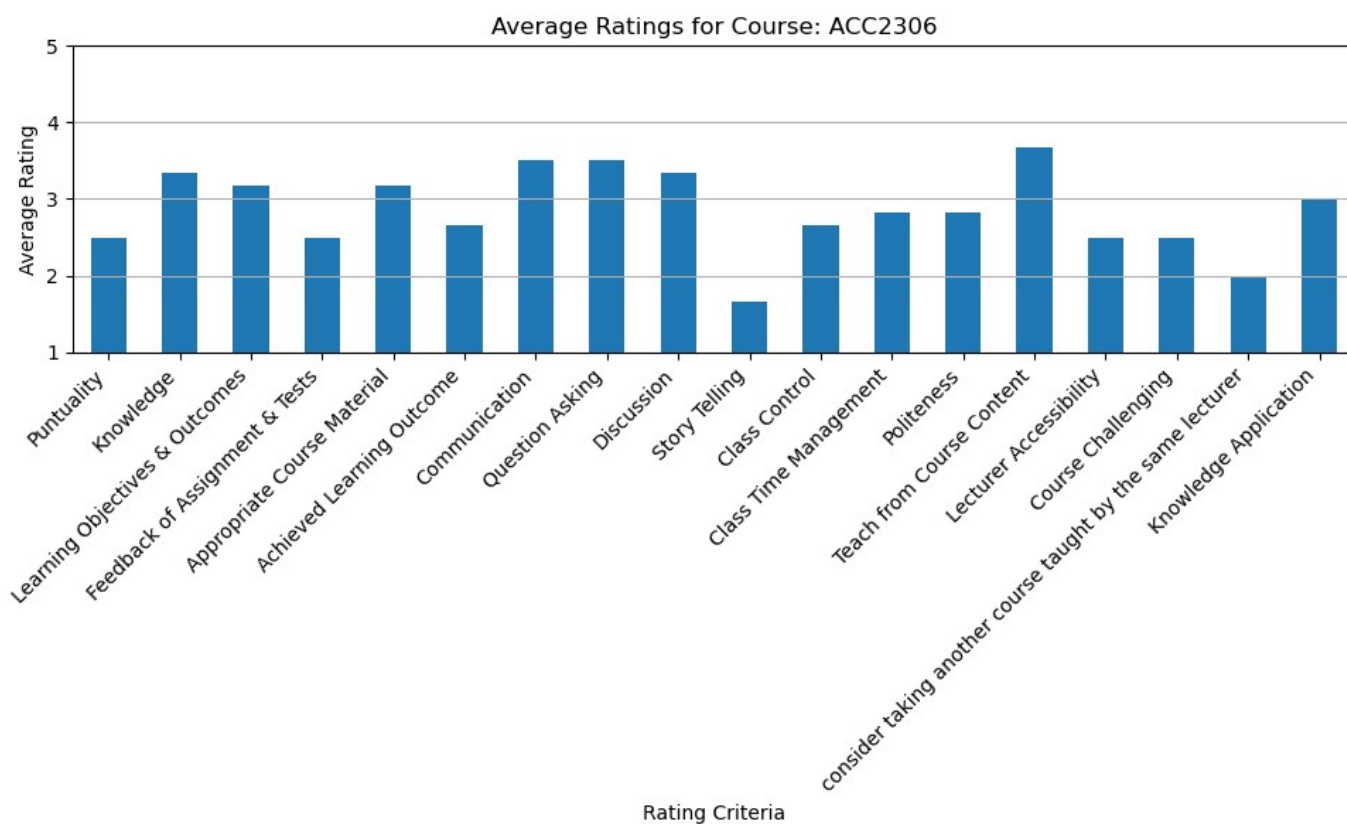
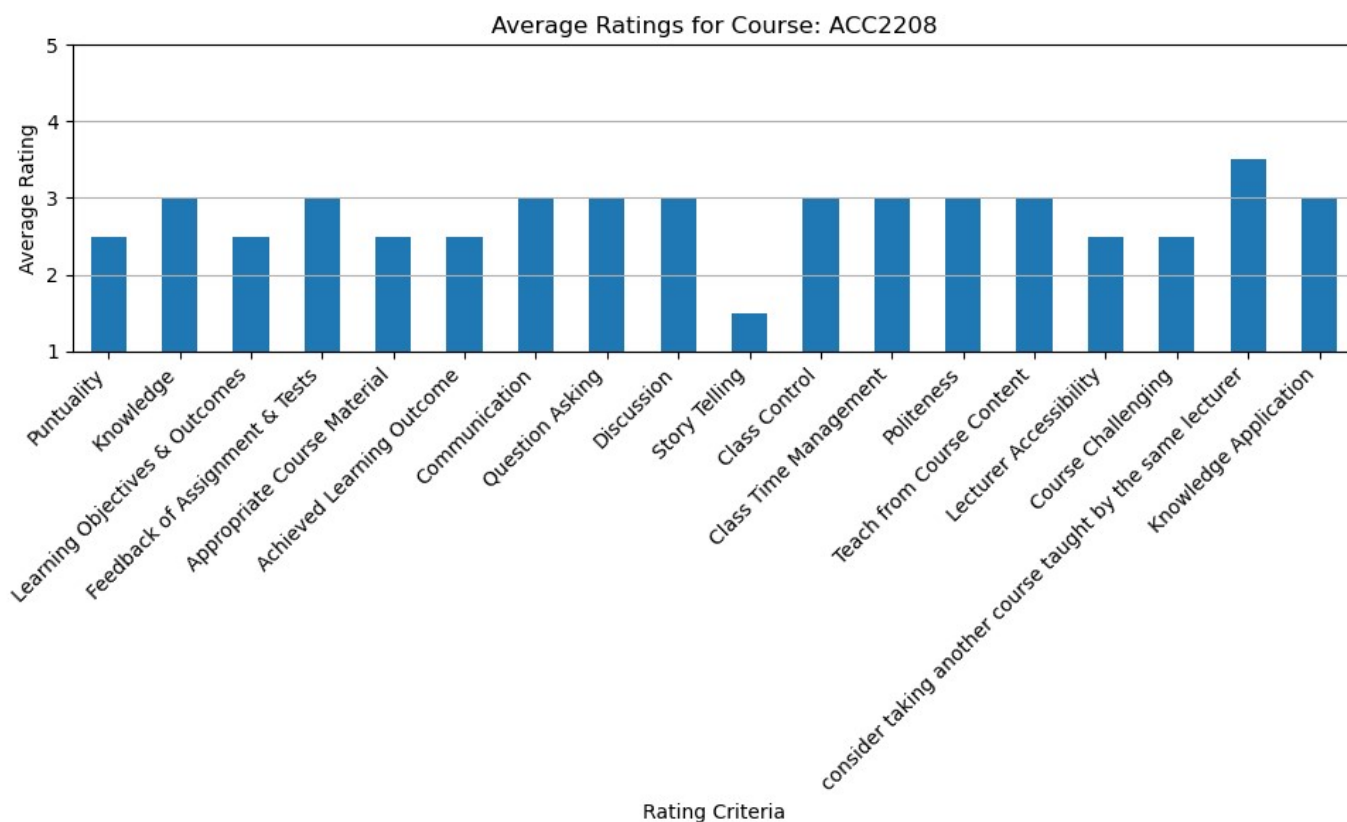
C:\Users\LENOVO\AppData\Local\Temp\ipykernel\_16840\53467708.py:12: FutureWarning: The default value of numeric\_only in DataFrameGroupBy.mean is deprecated. In a future version, numeric\_only will default to False. Either specify numeric\_only or select only columns which should be valid for the function.

```
mean_ratings_by_course = data.groupby('CourseCode')[rating_columns].mean()
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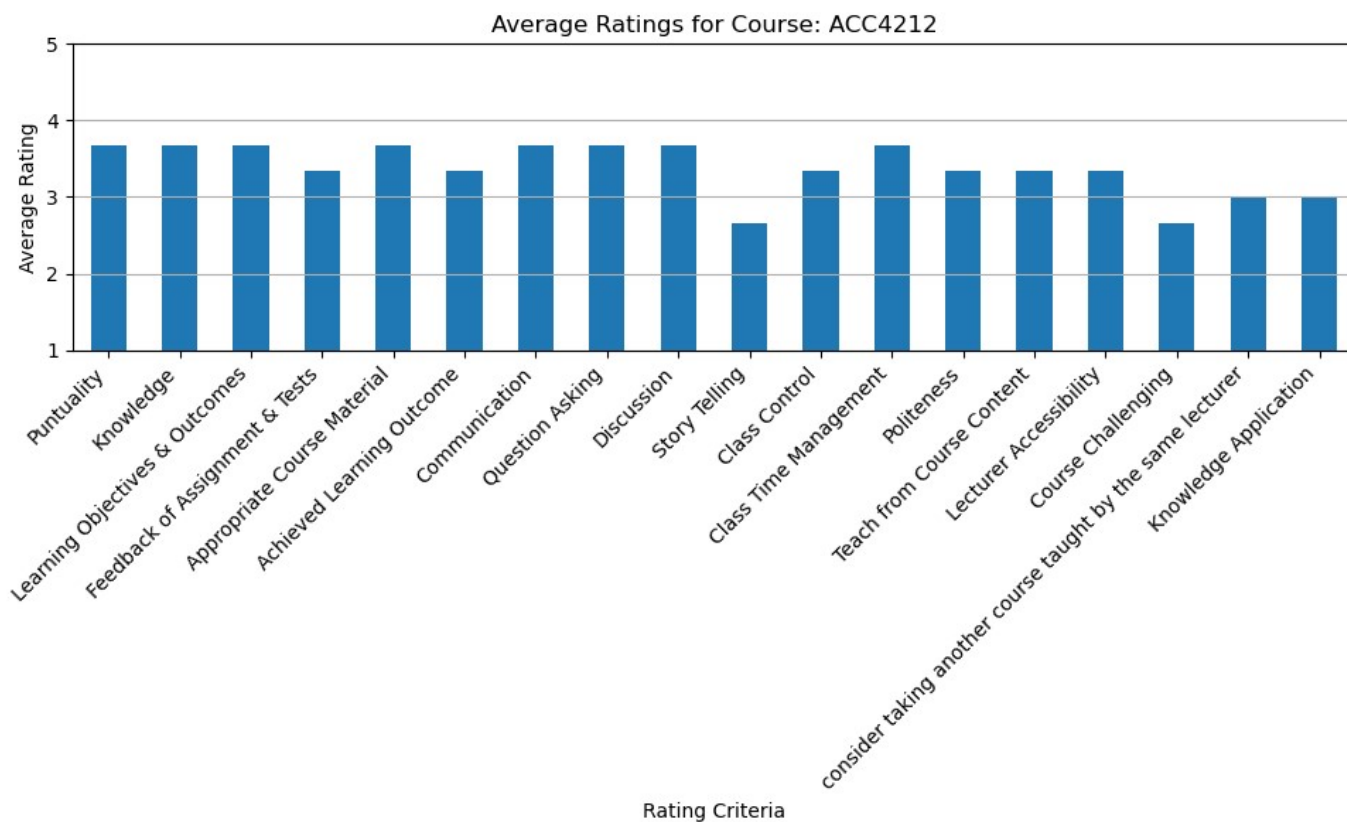
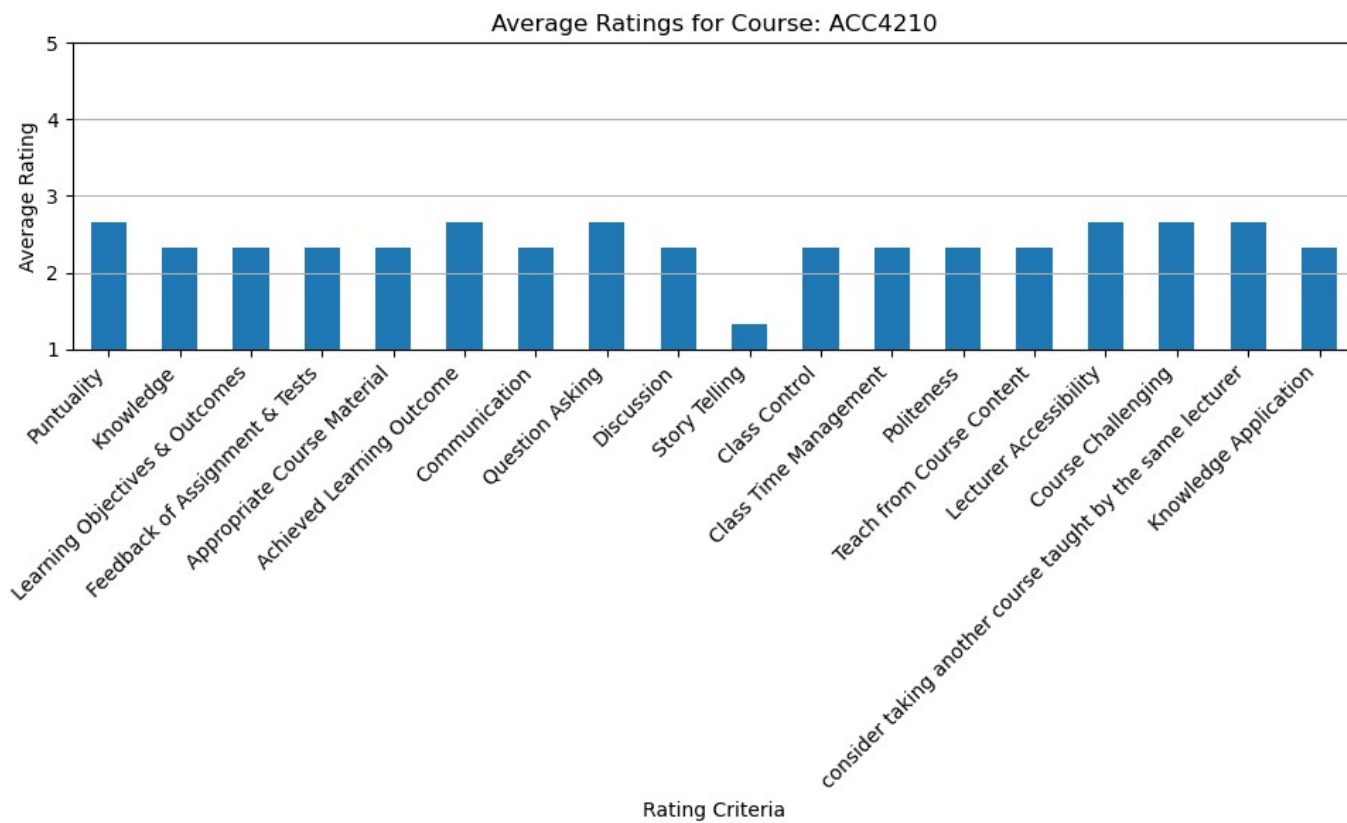


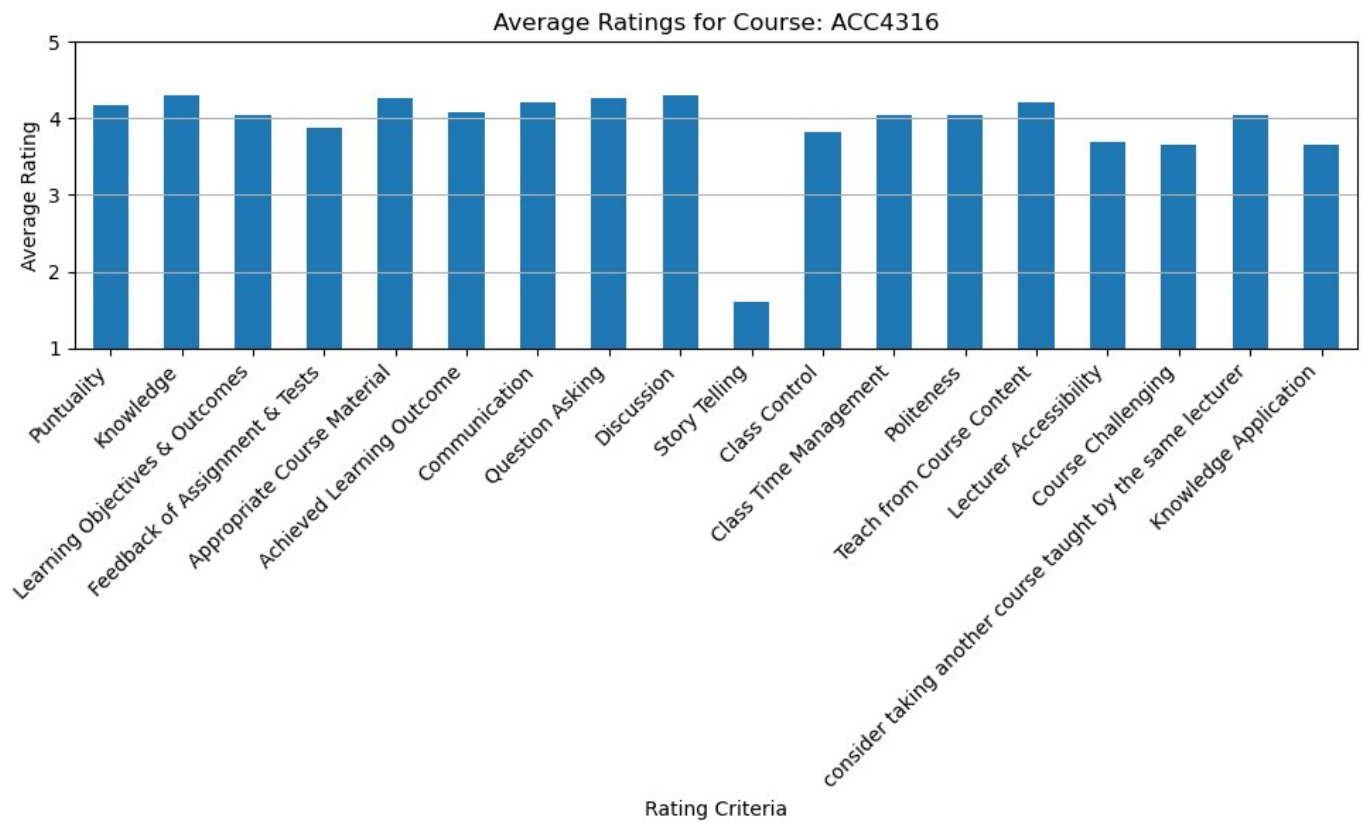
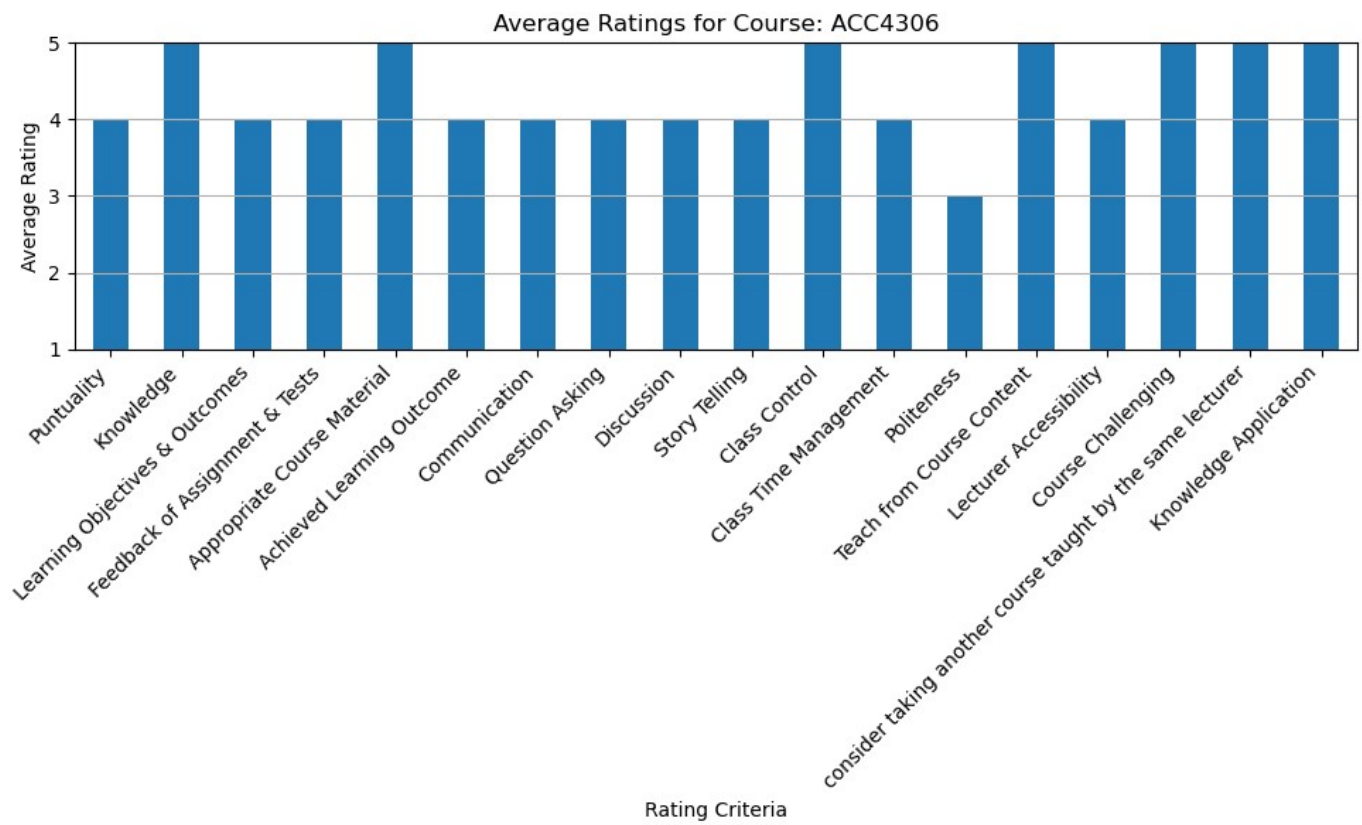


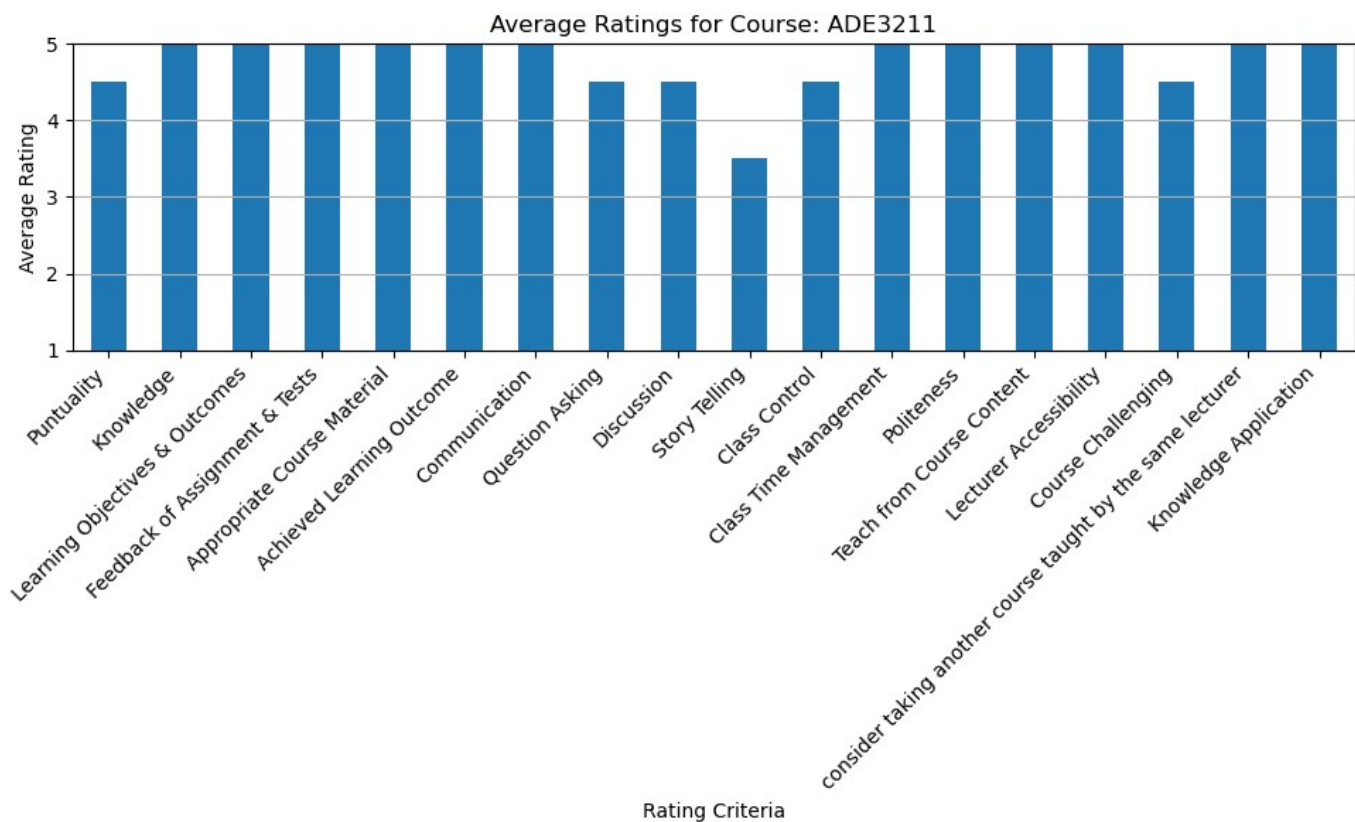
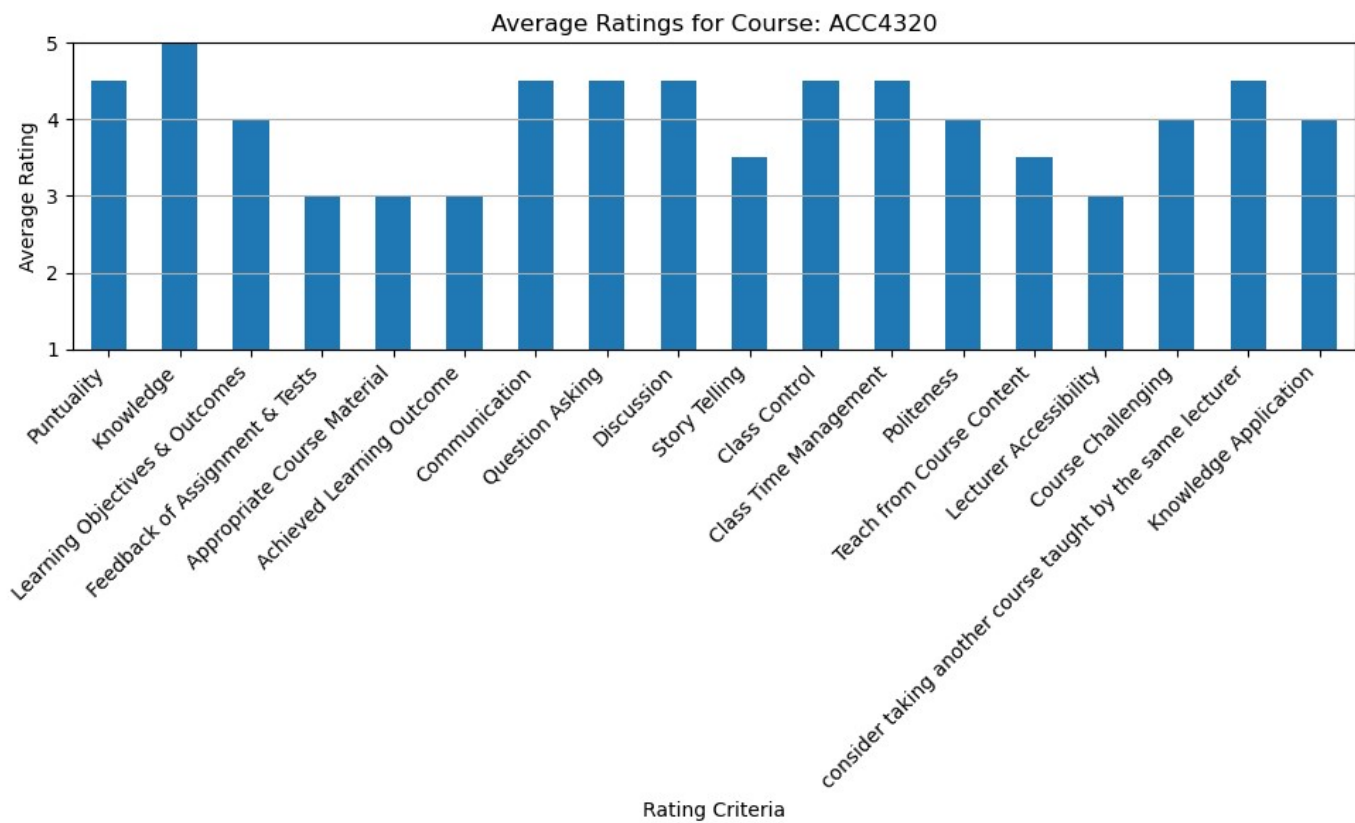


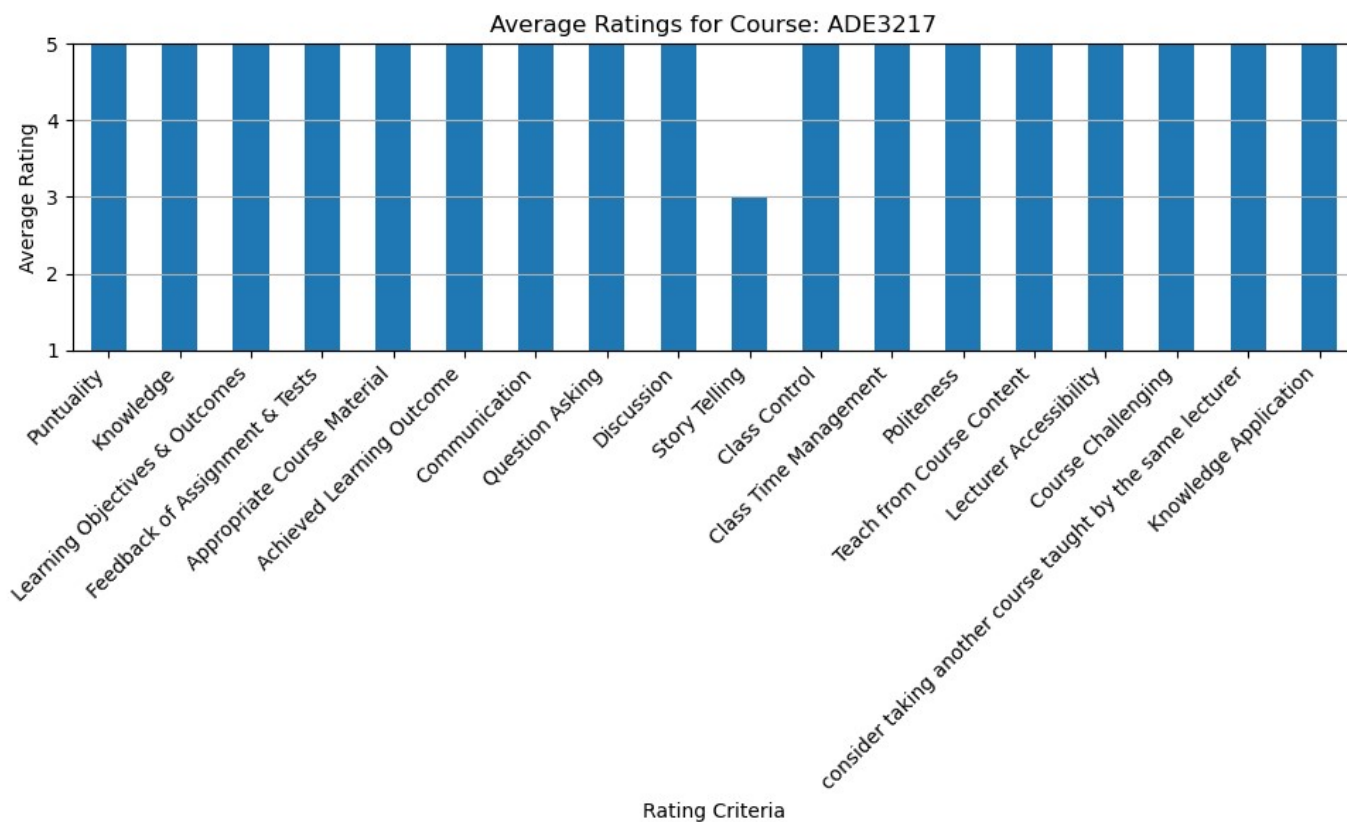
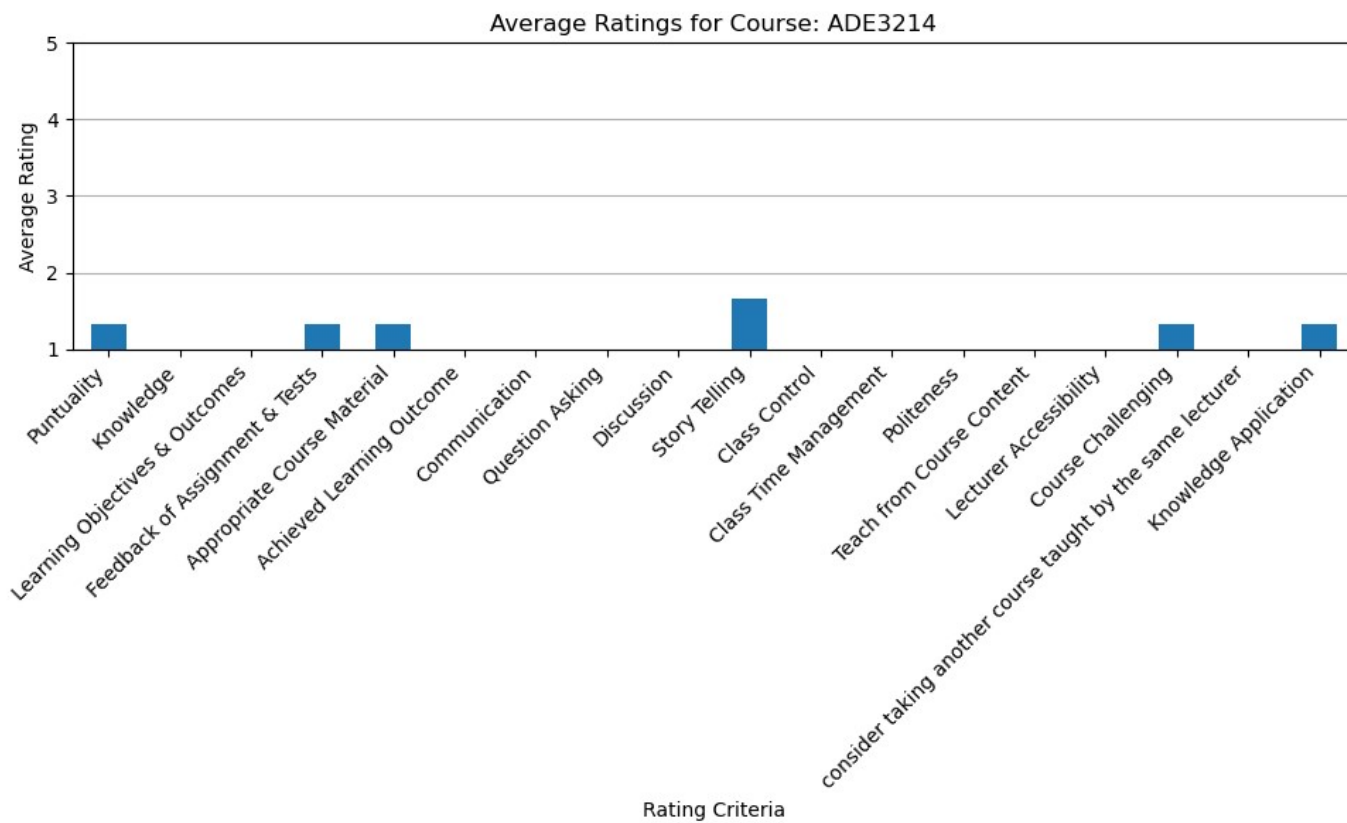


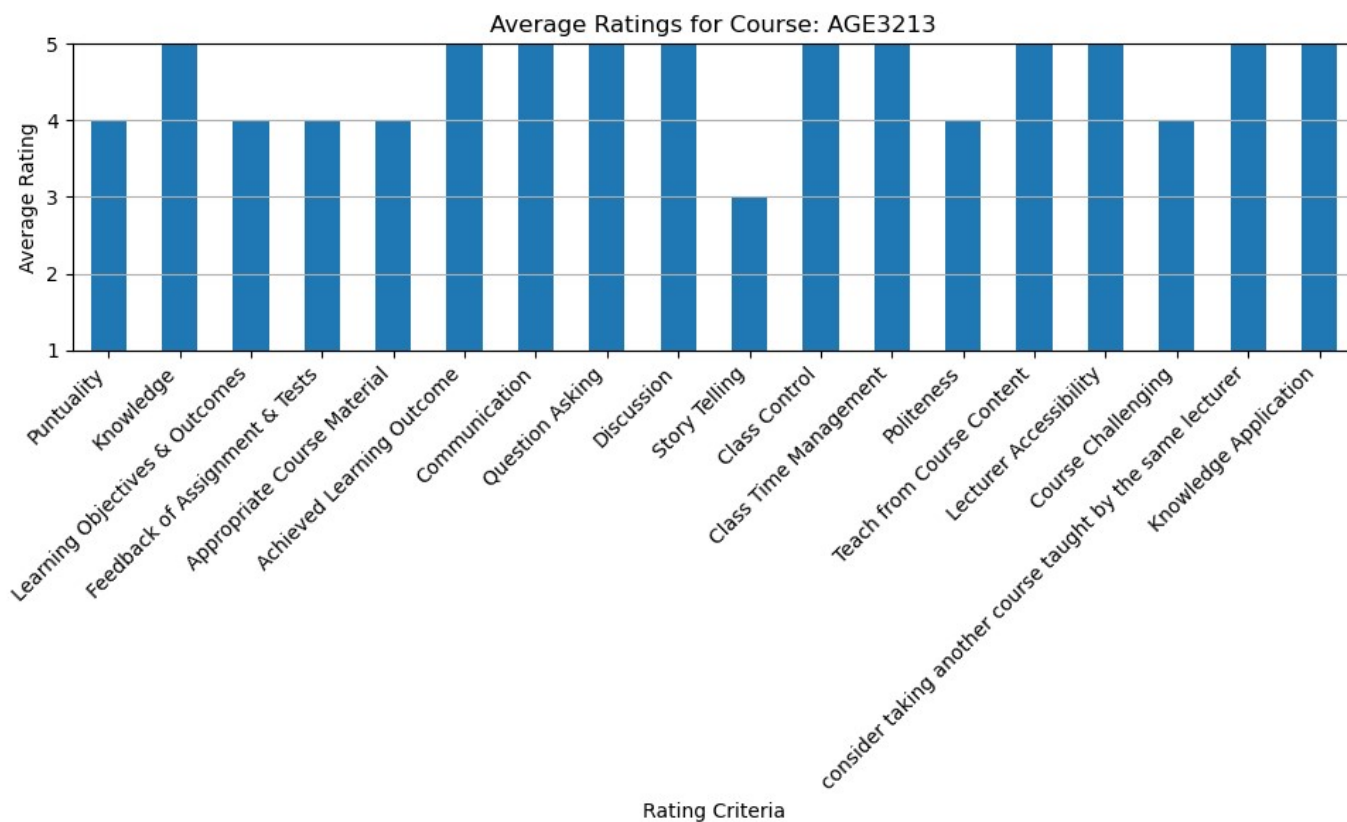
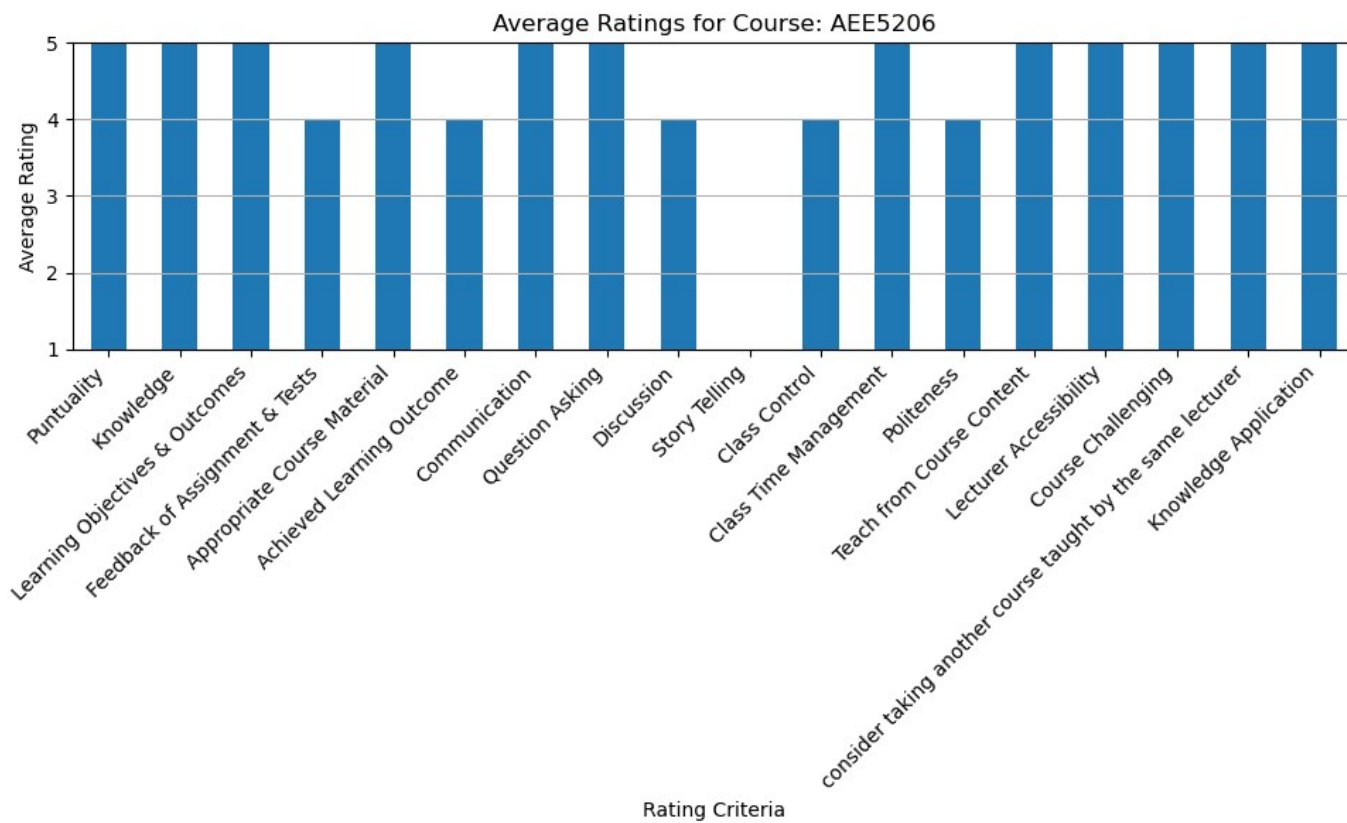




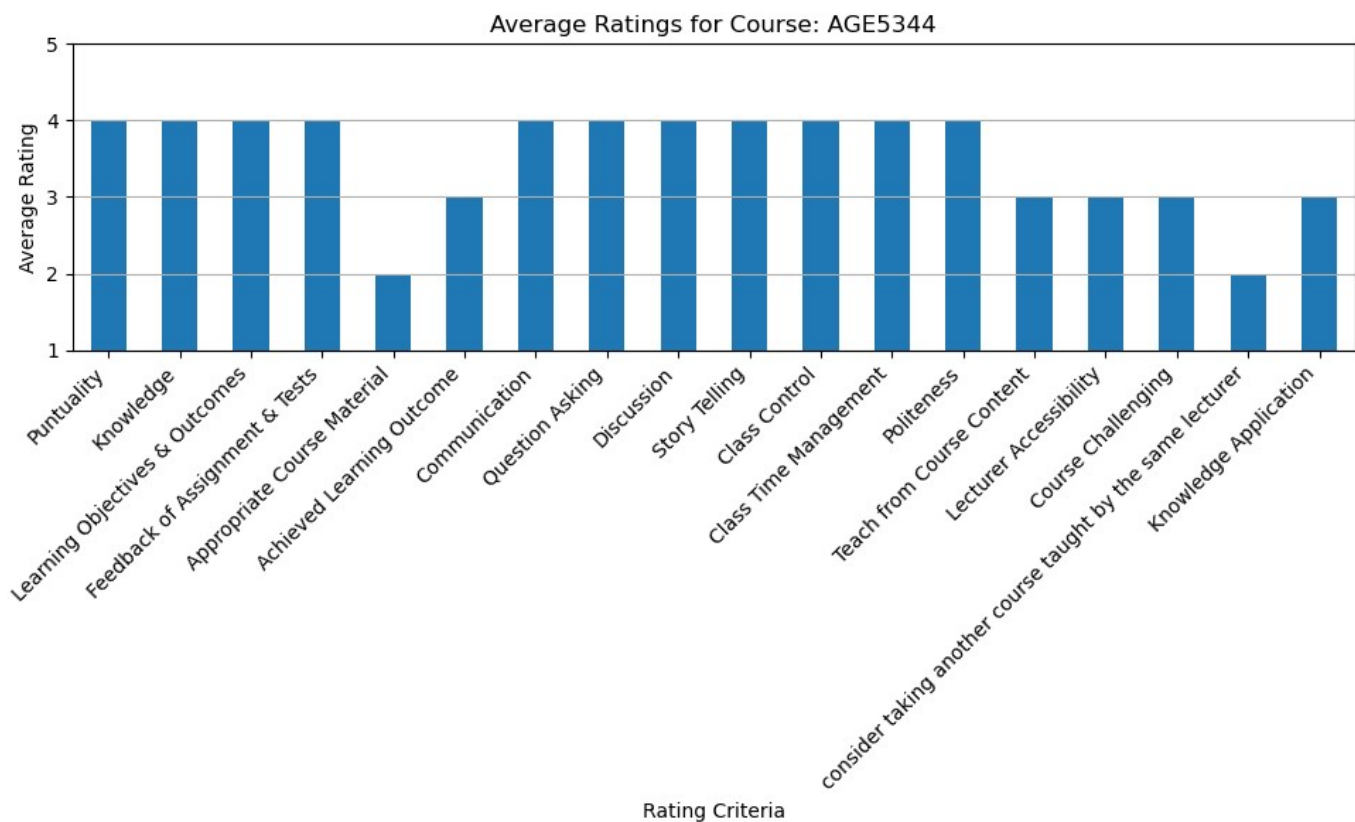
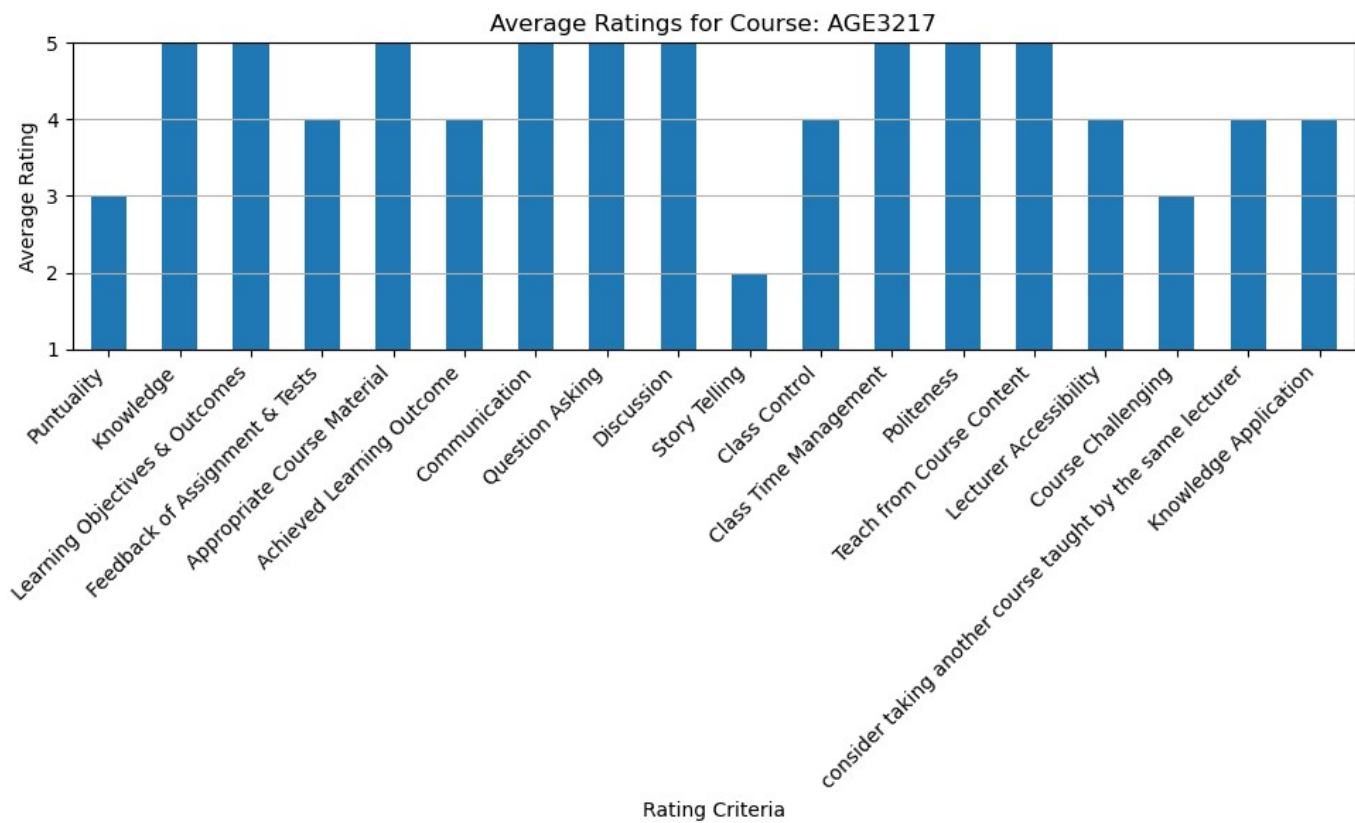




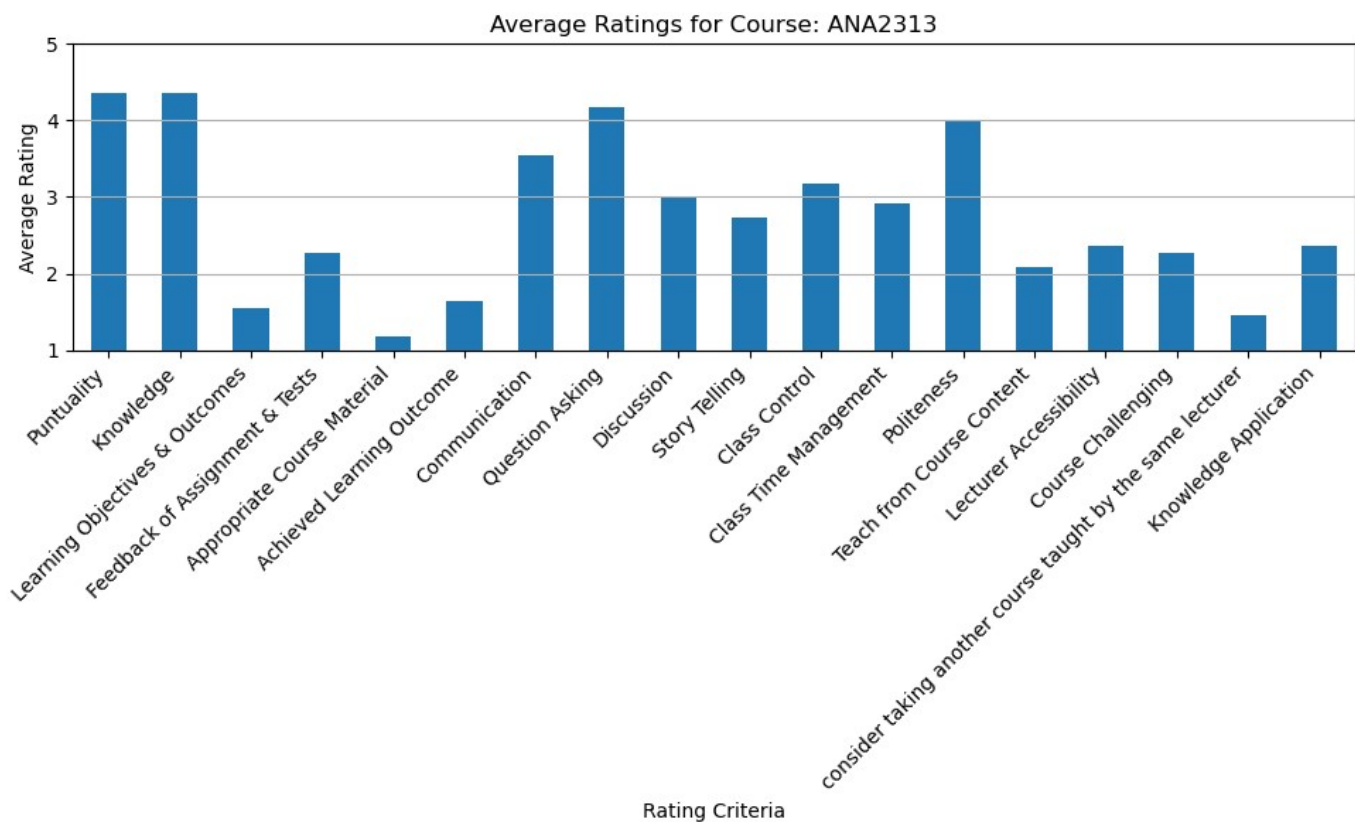
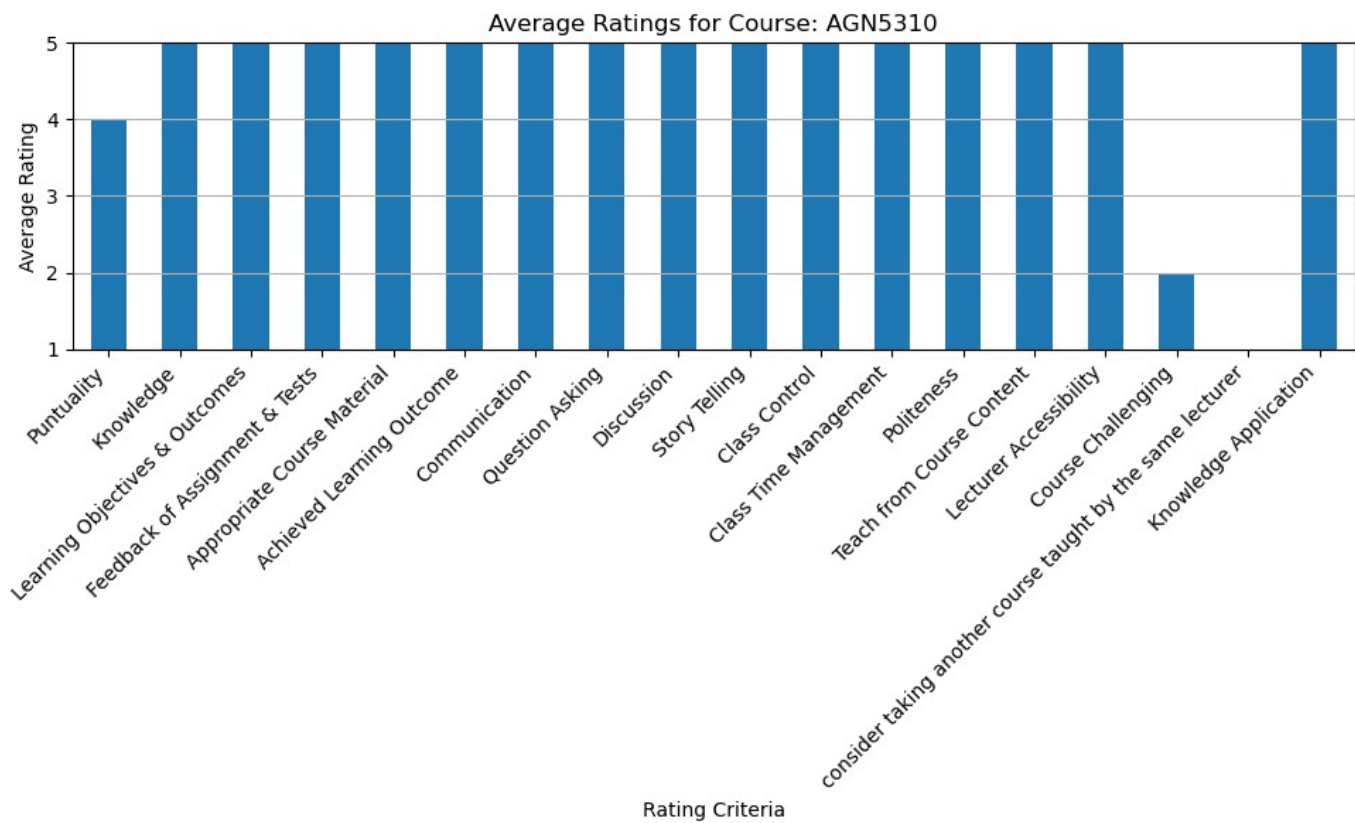


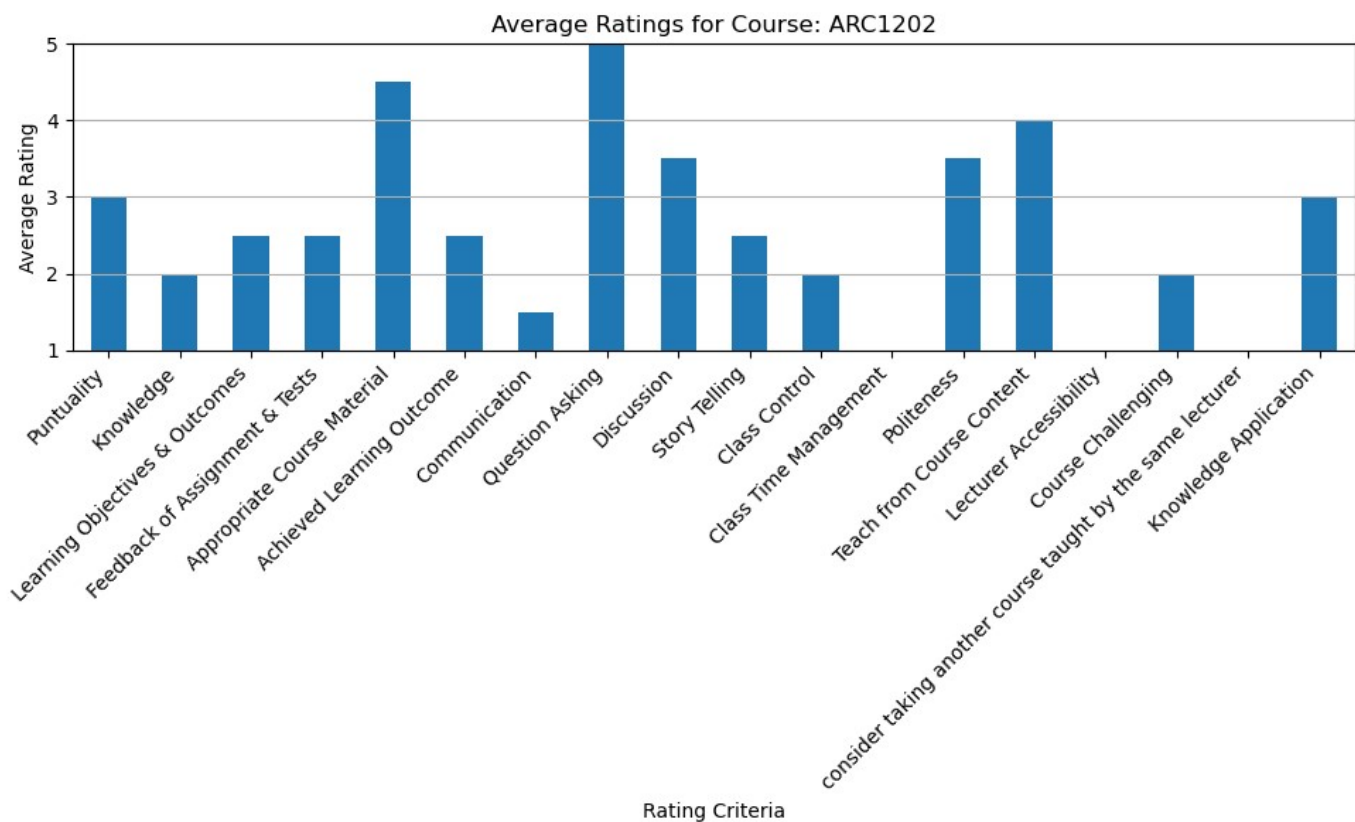
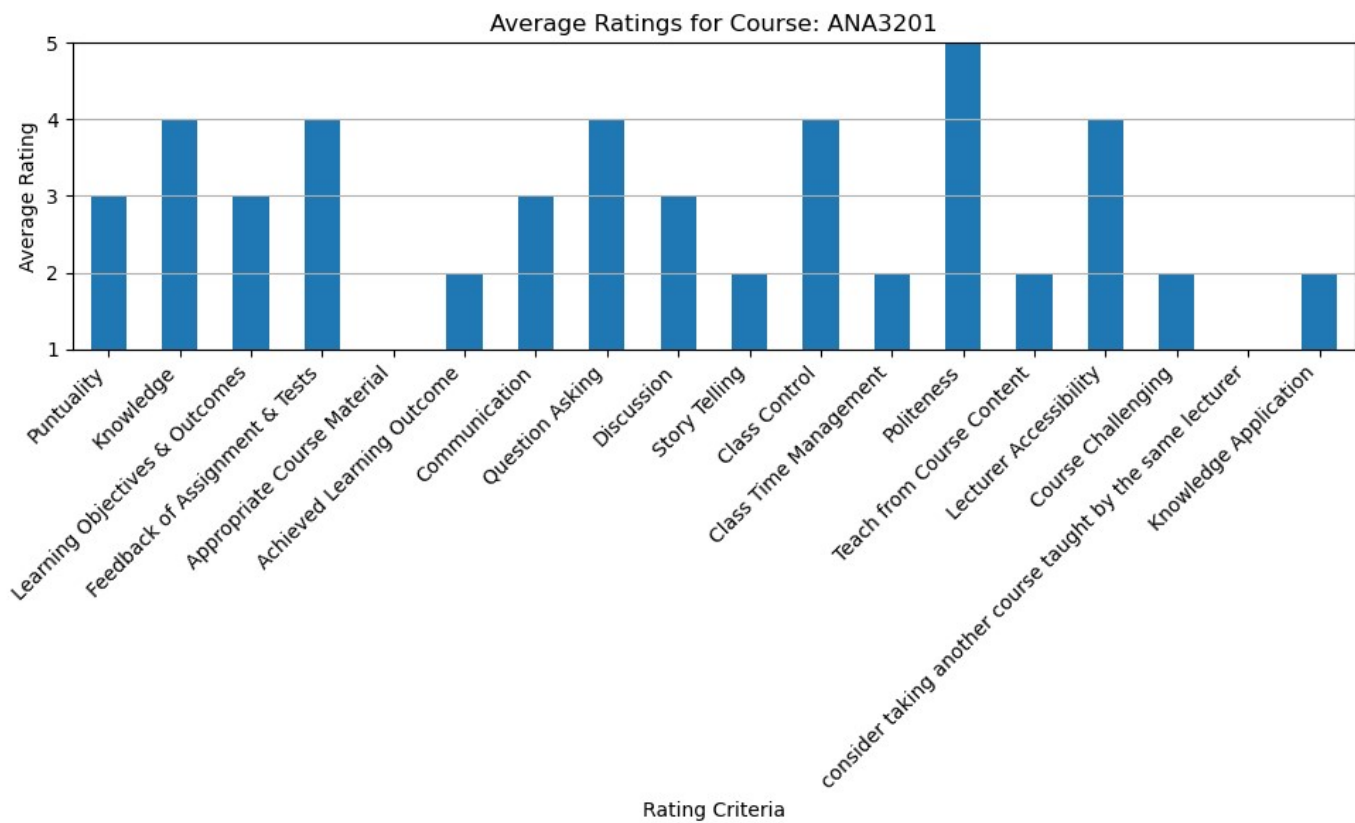


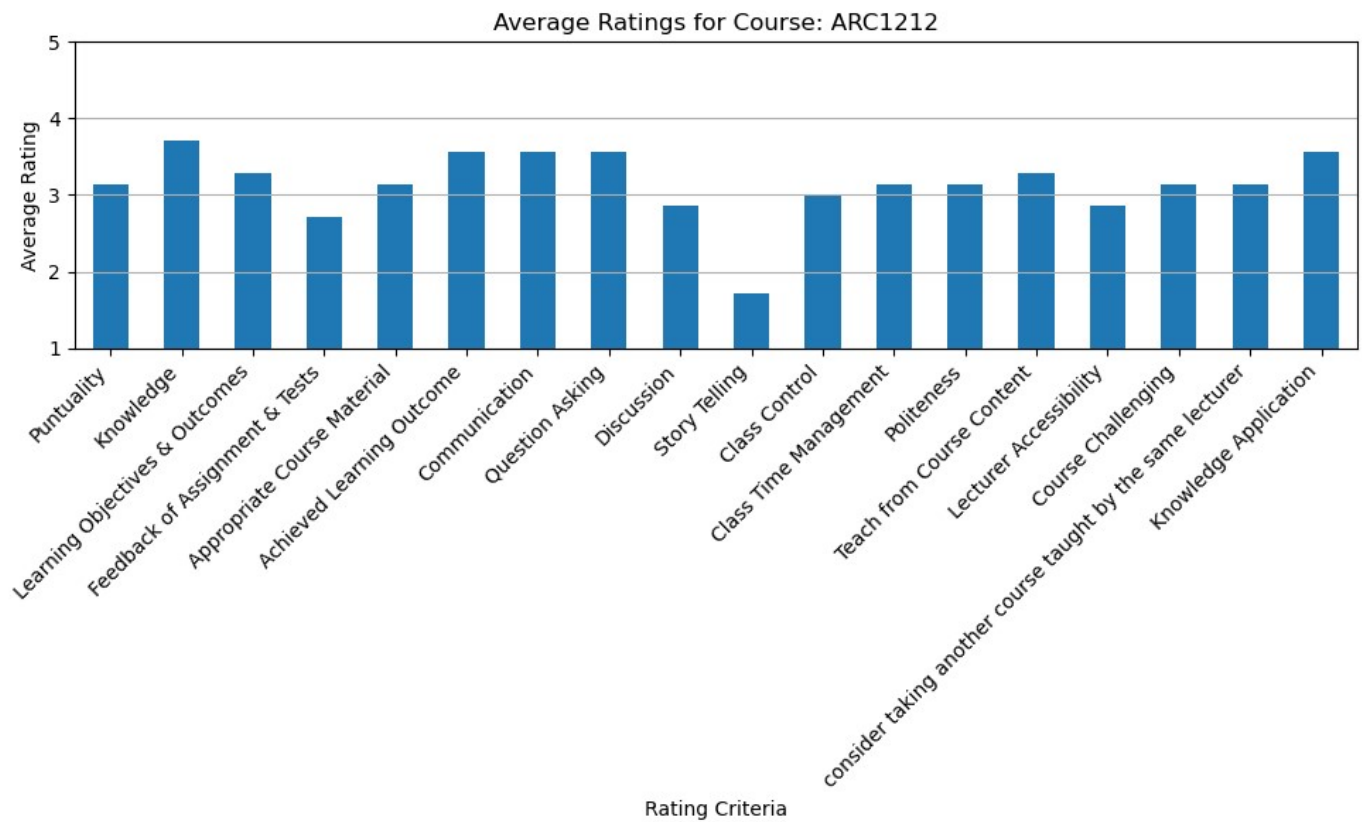
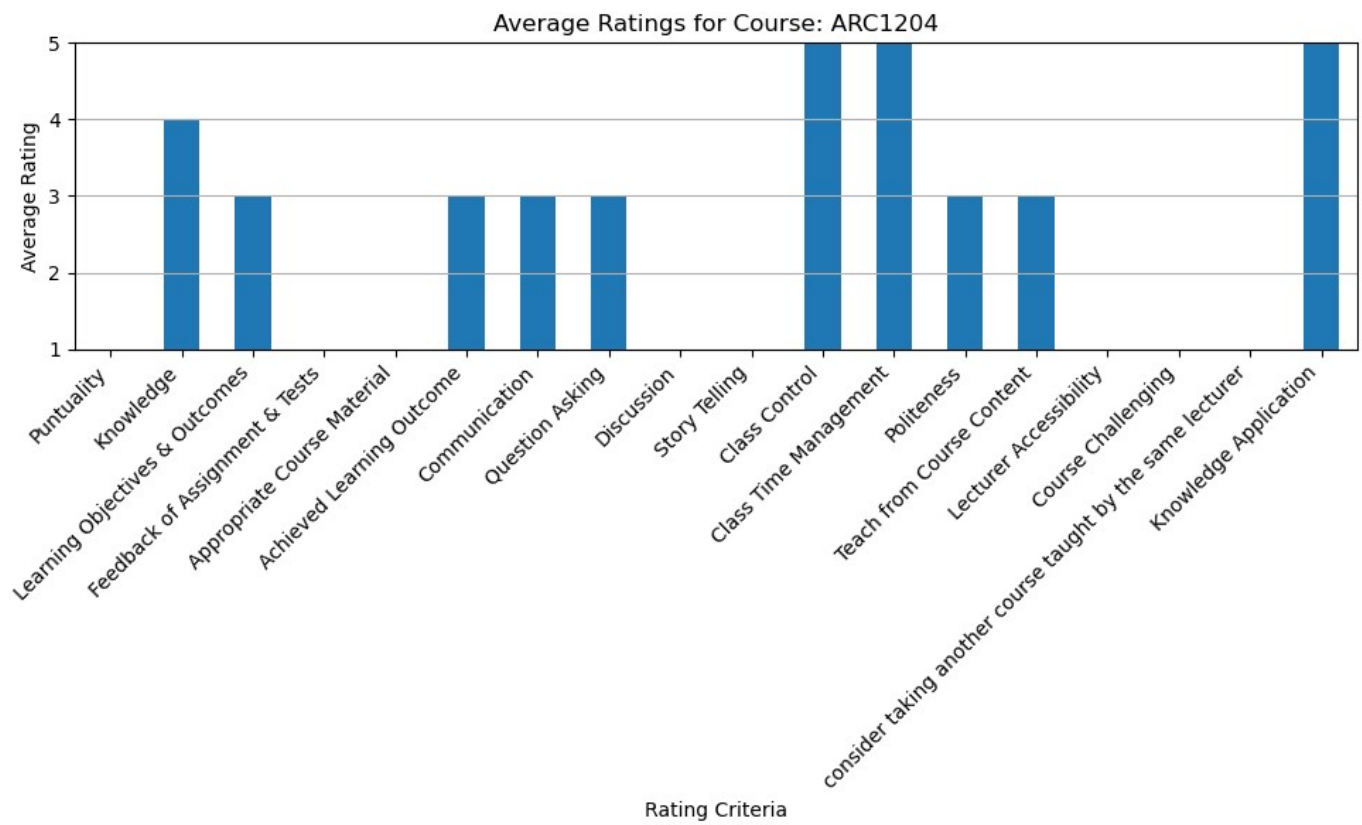


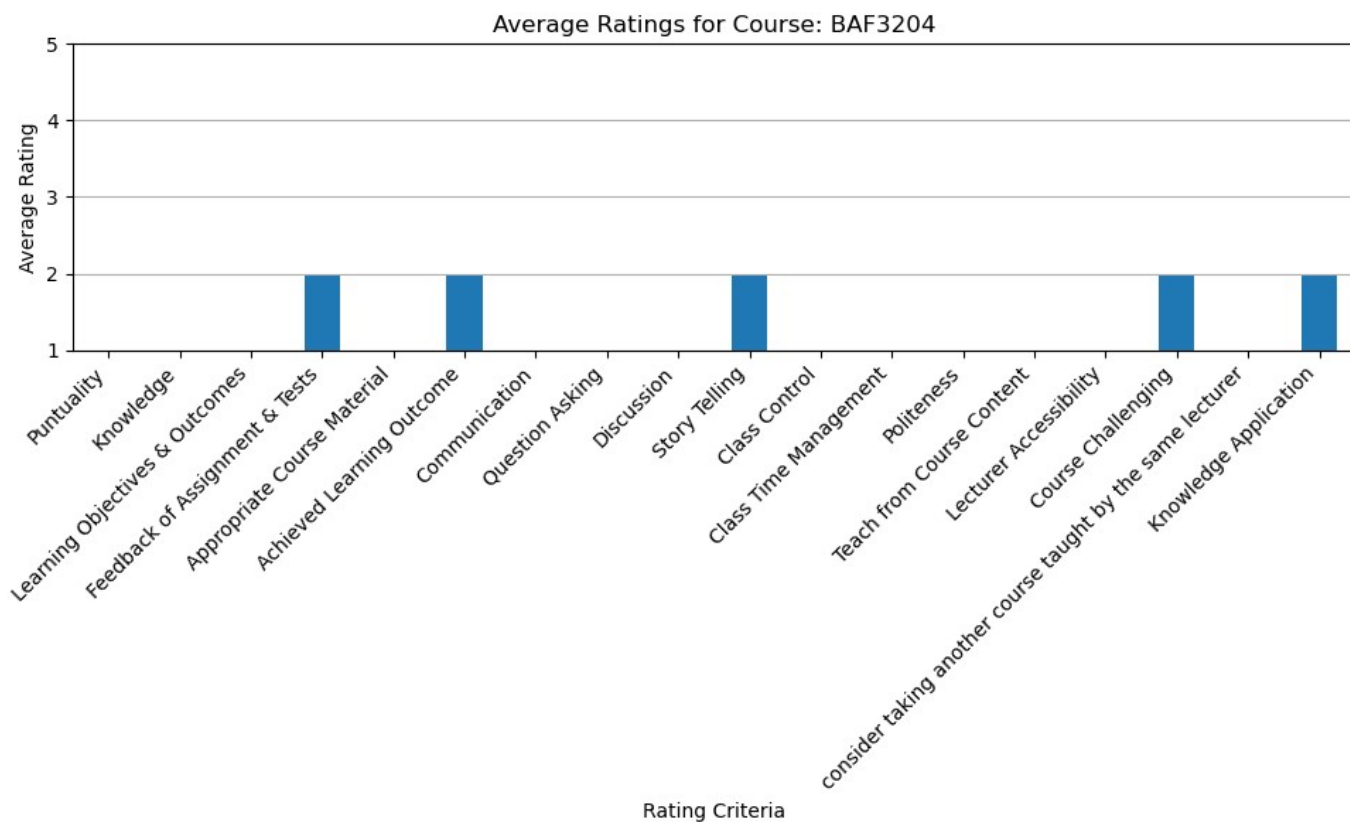
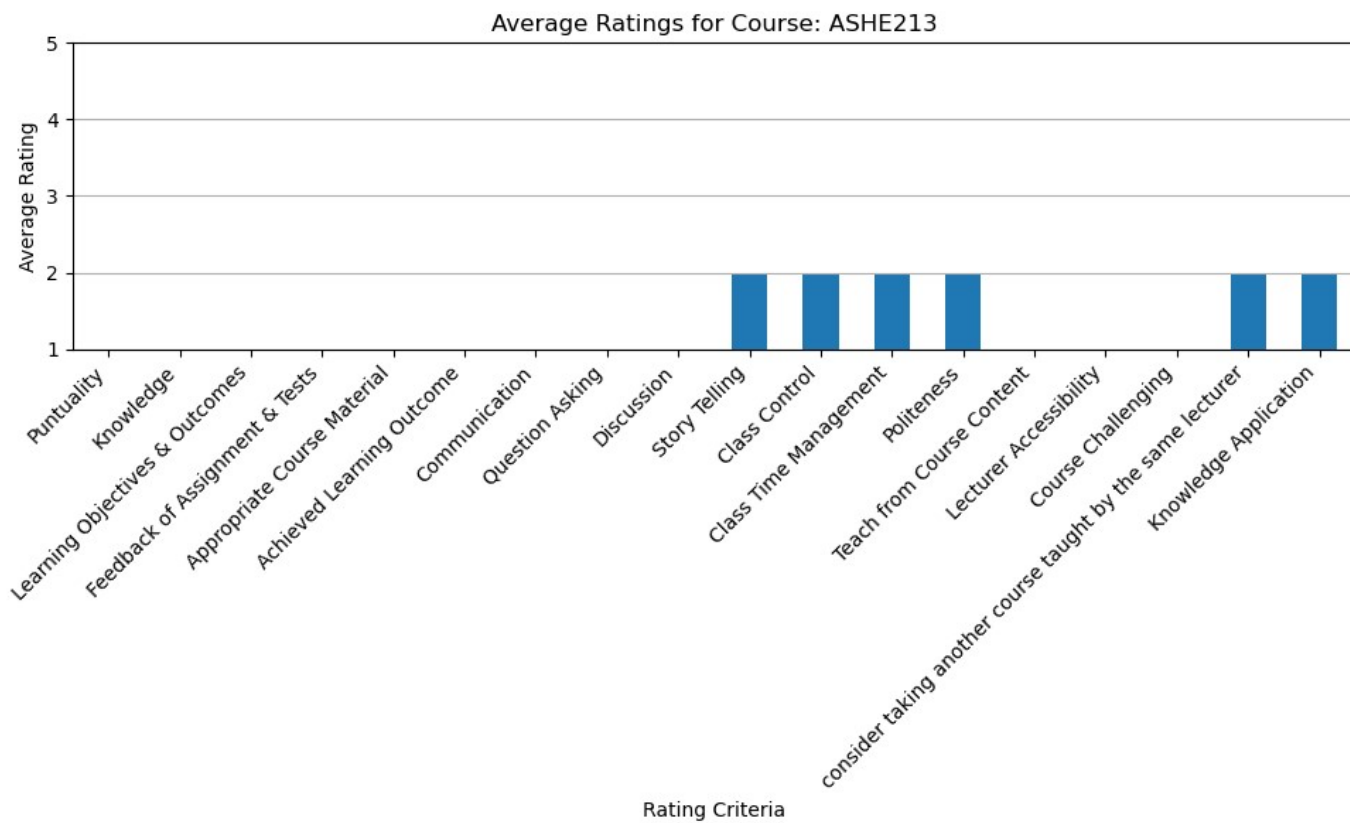


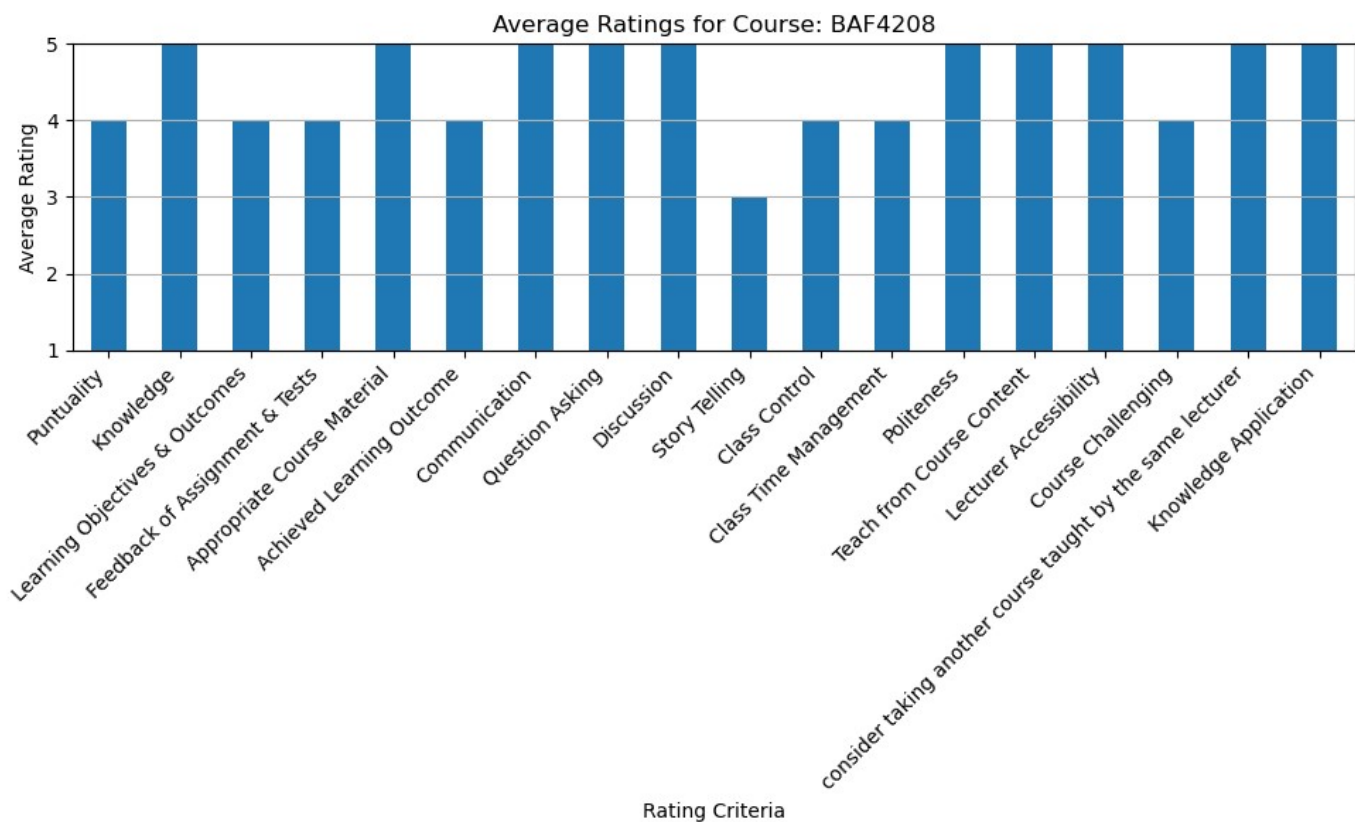
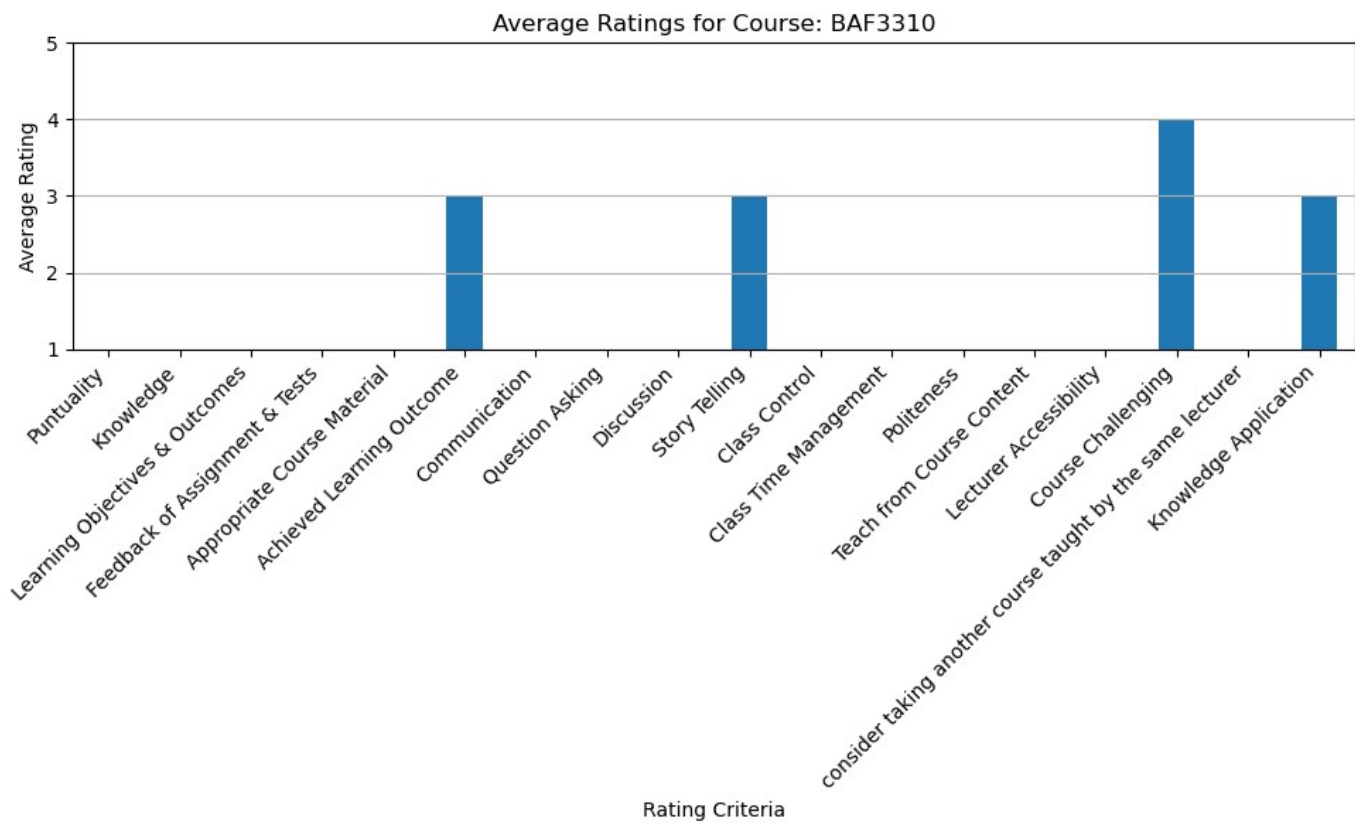


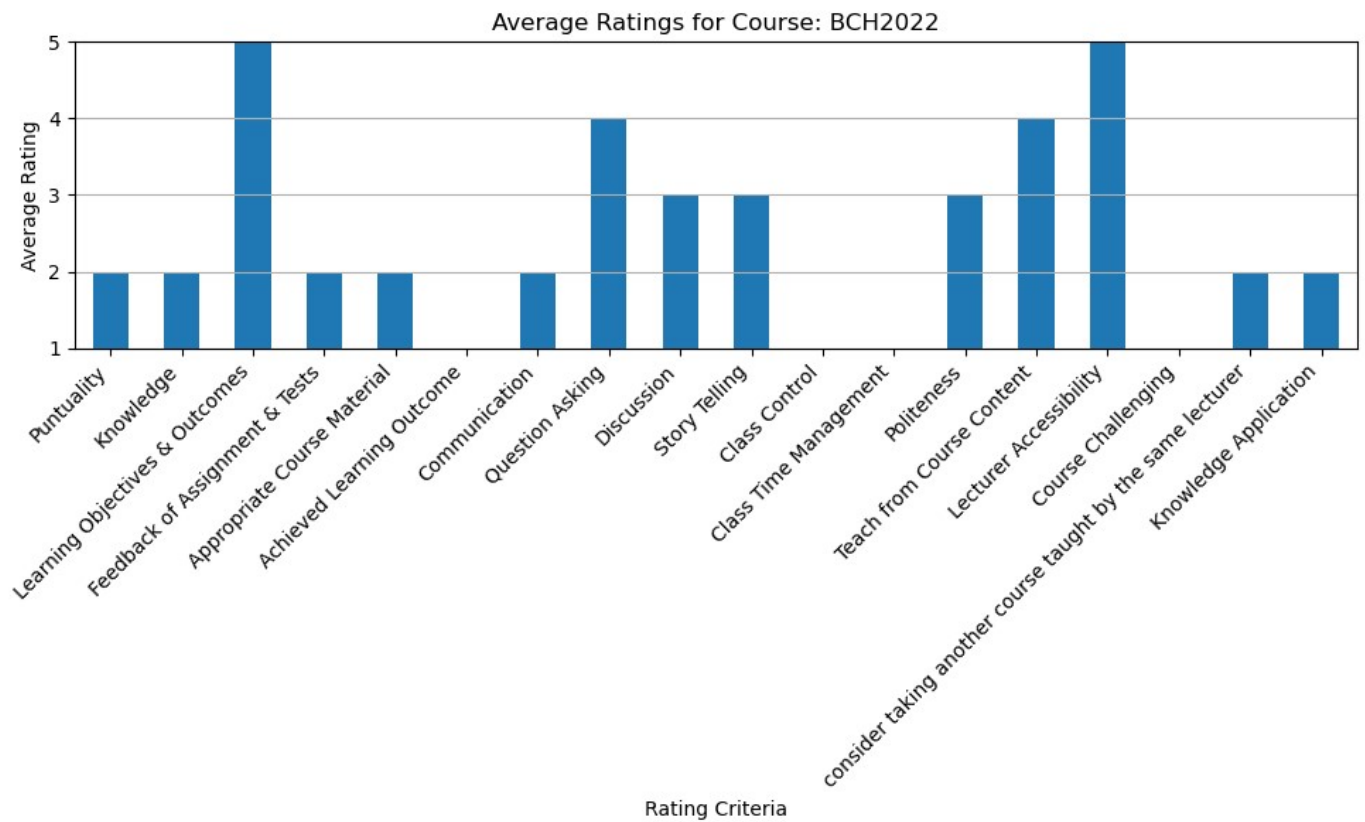
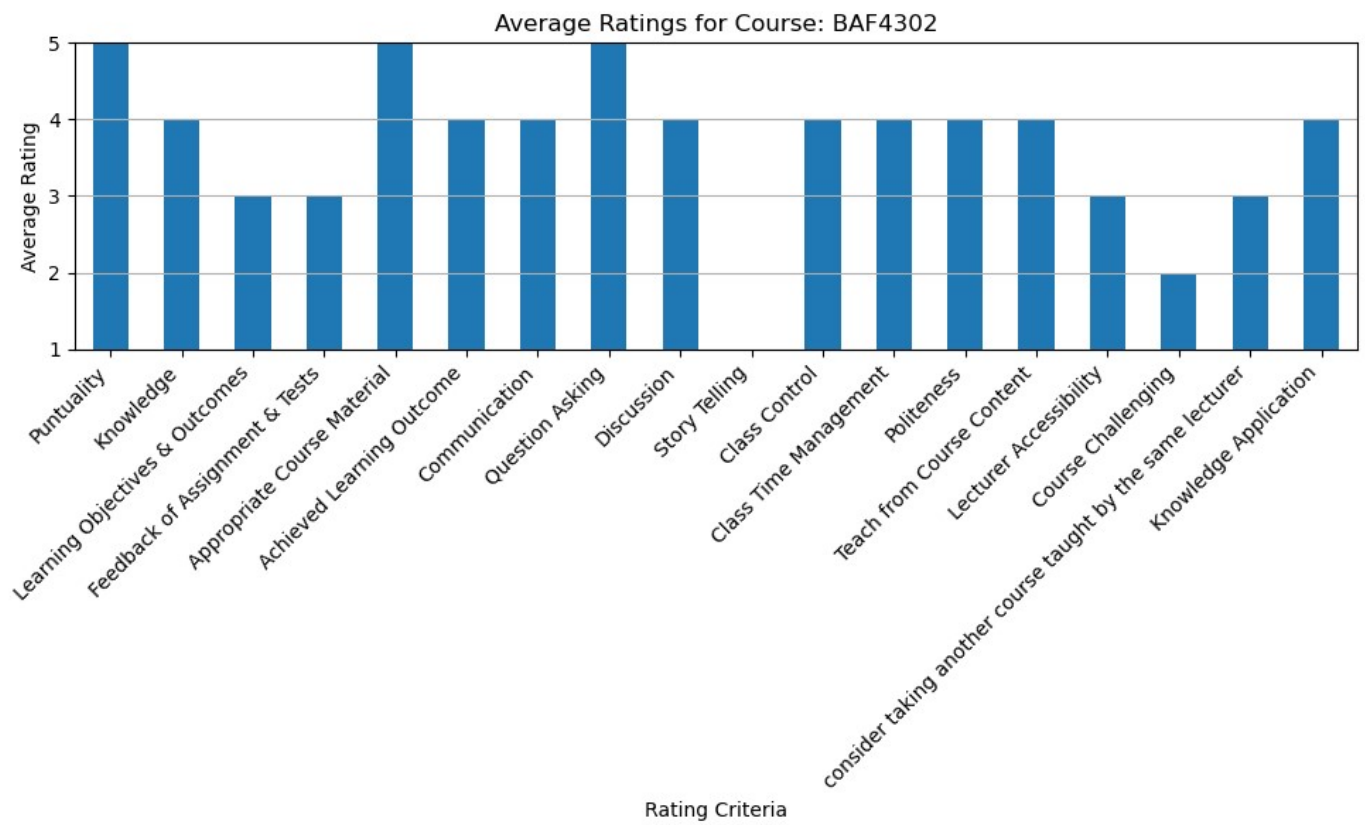




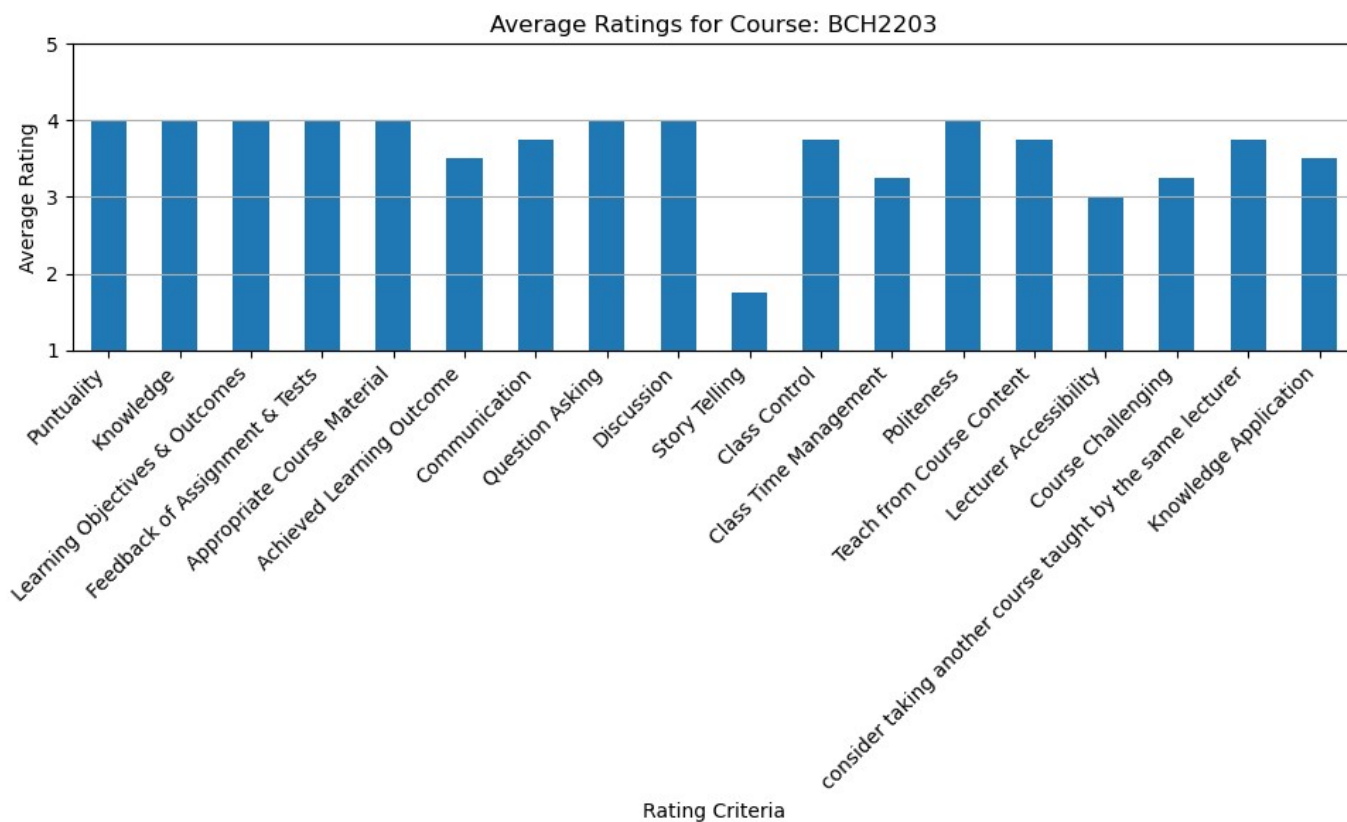
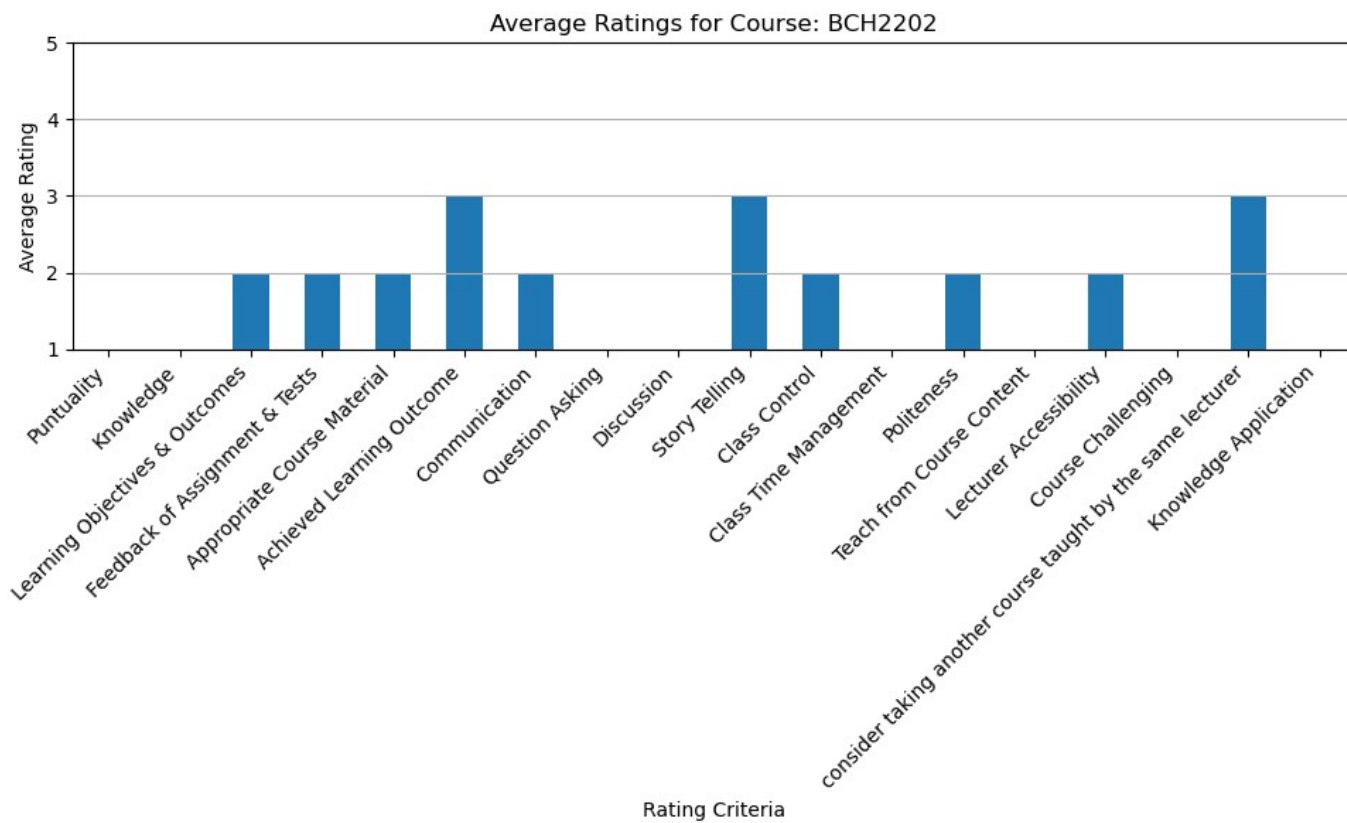


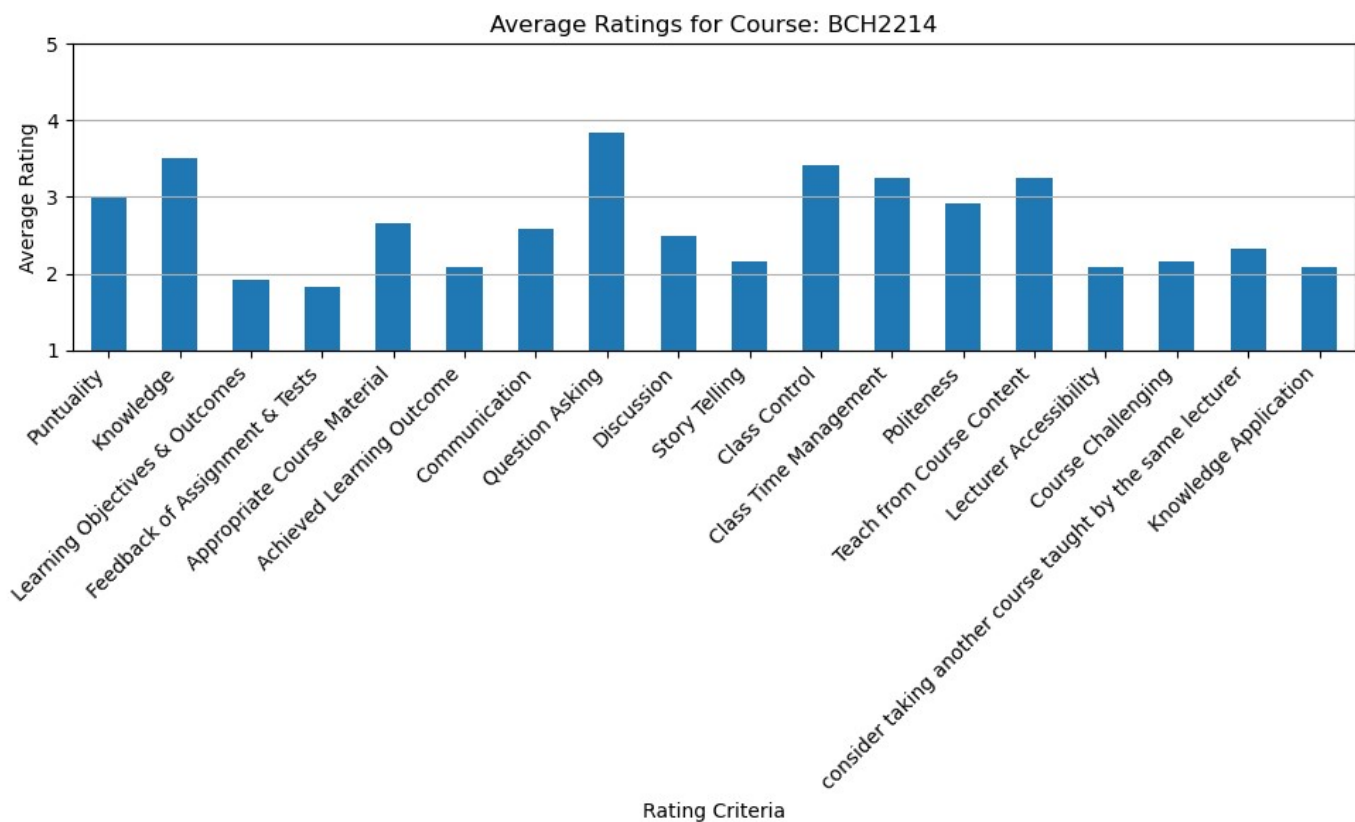
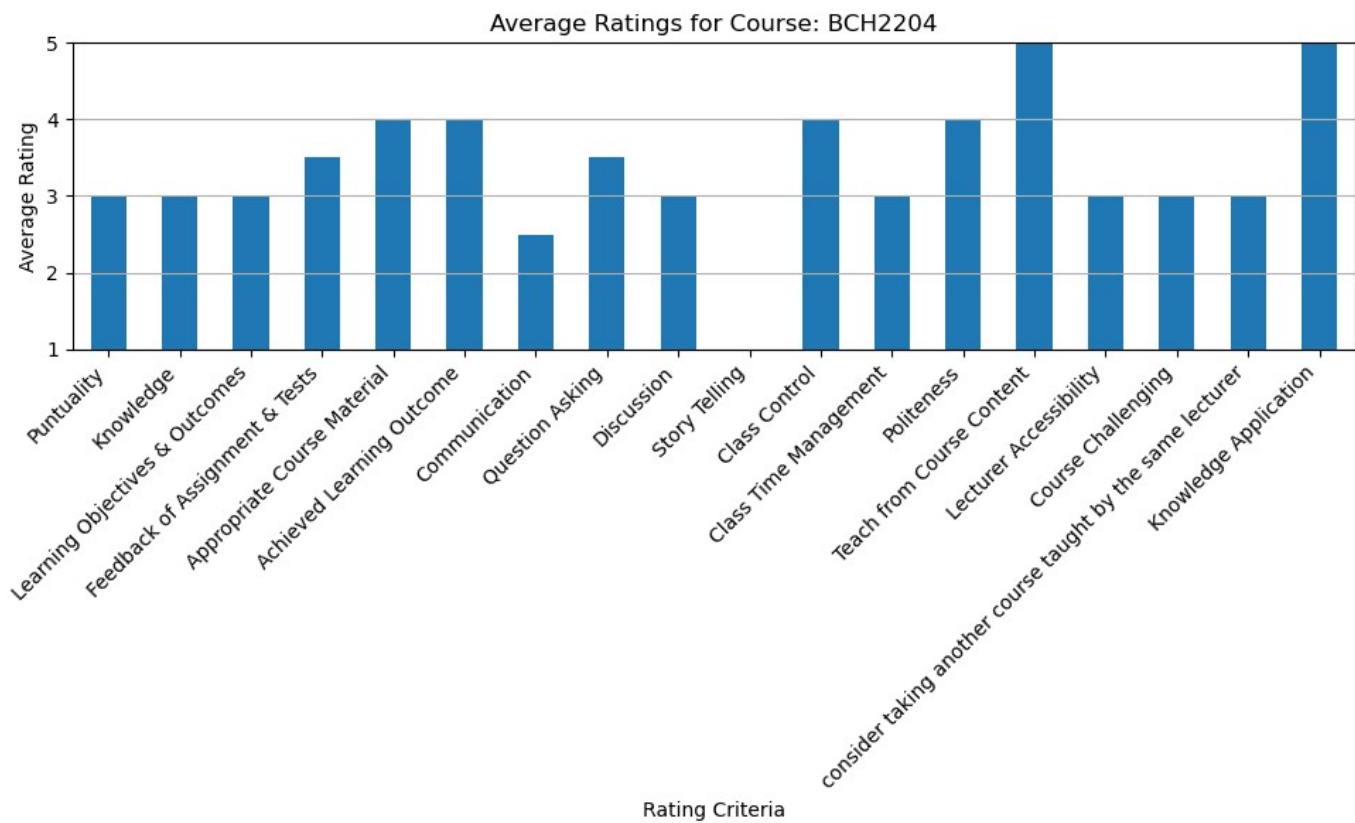


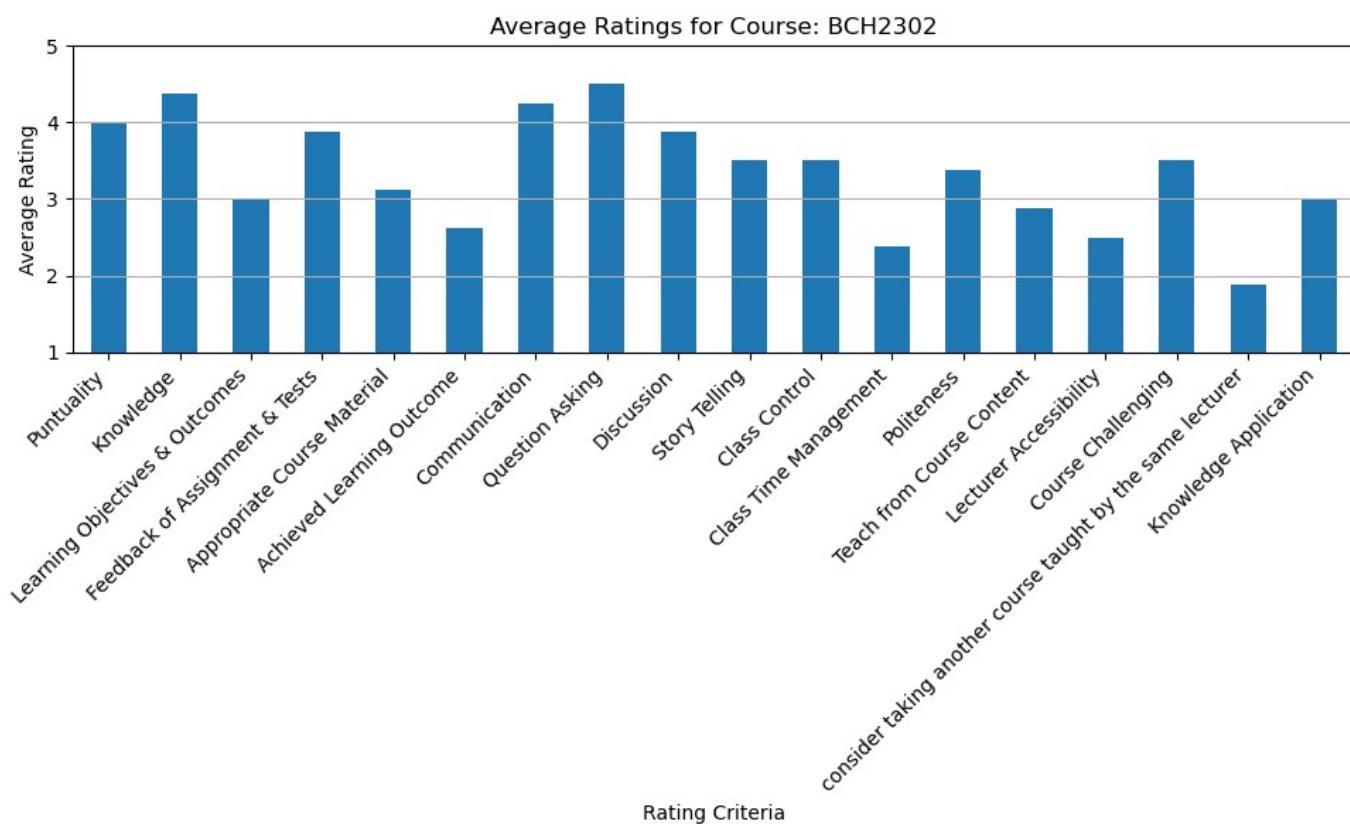
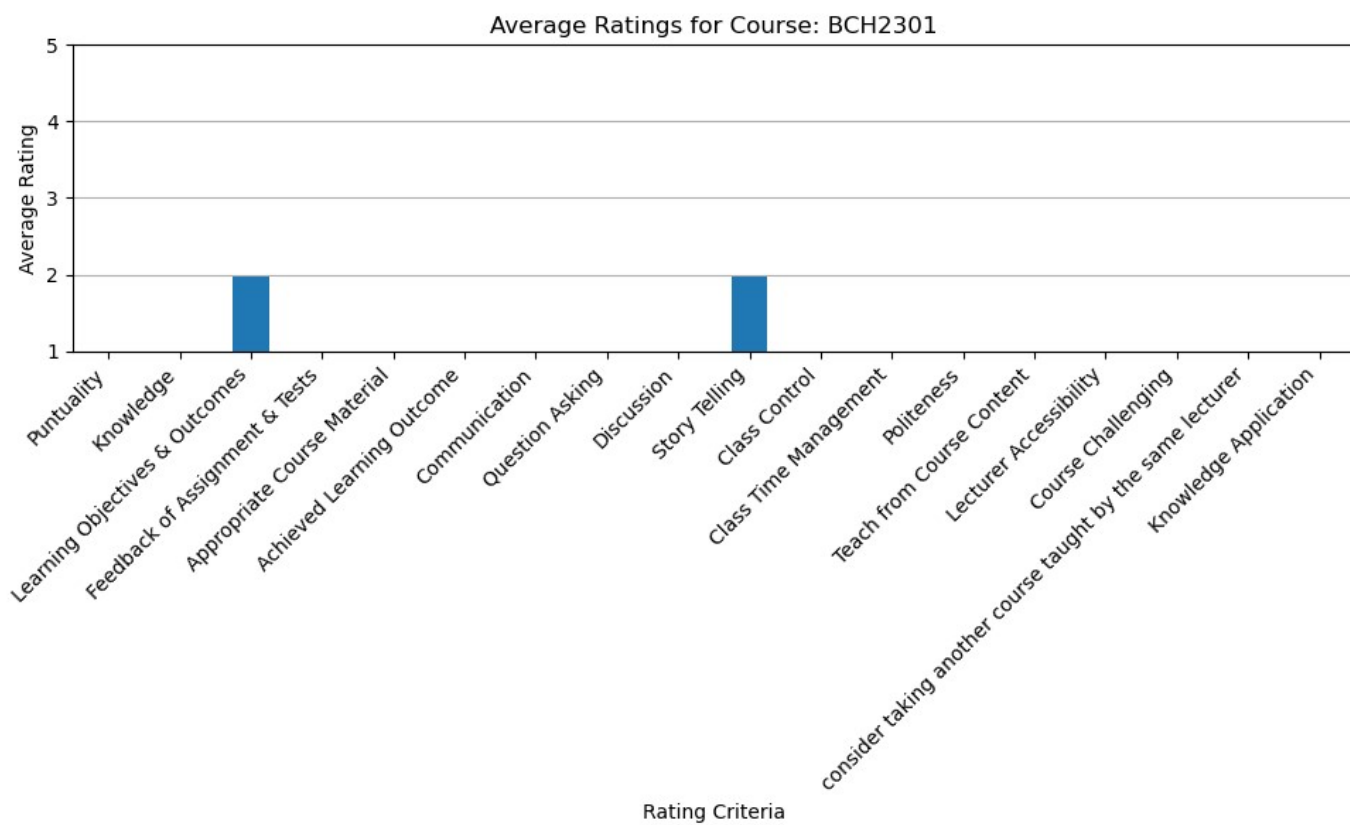


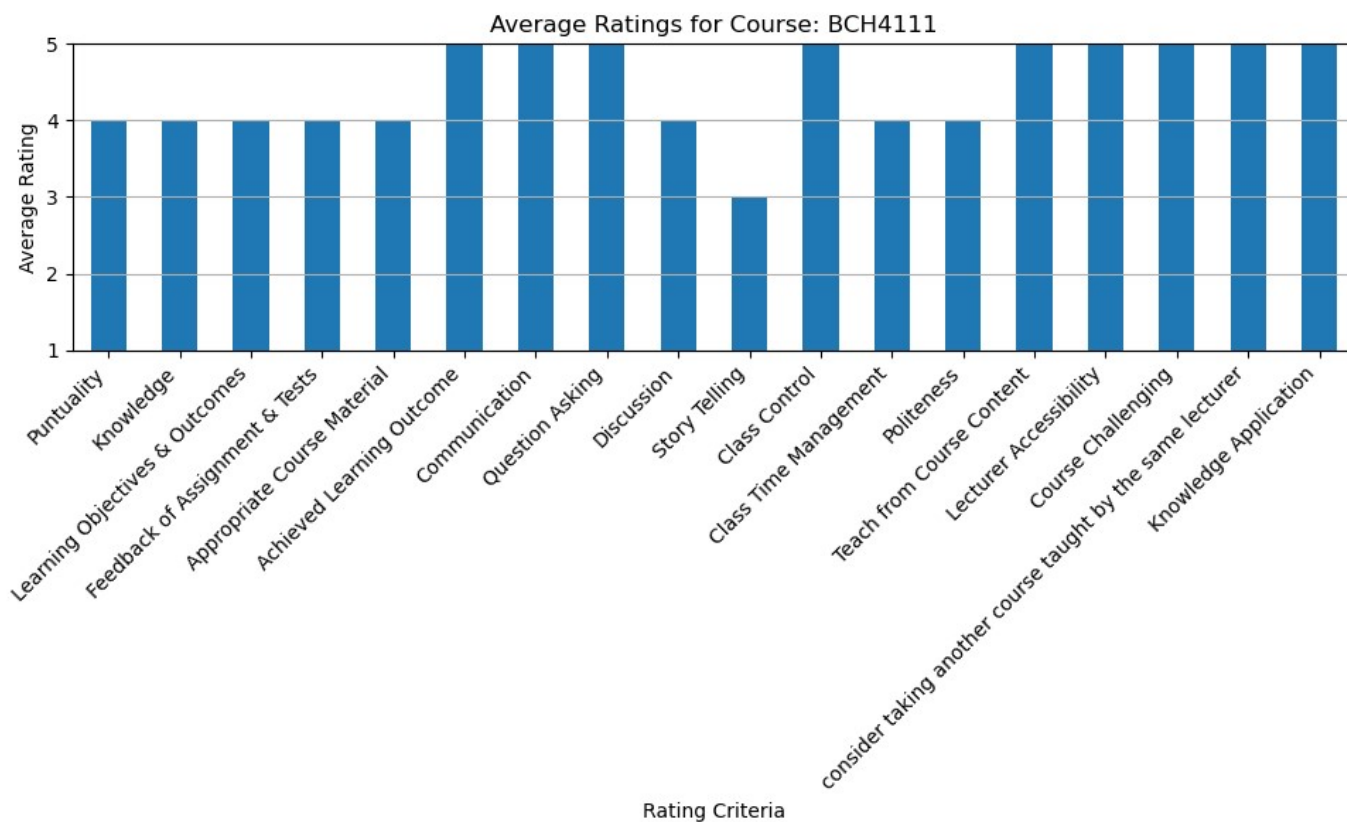
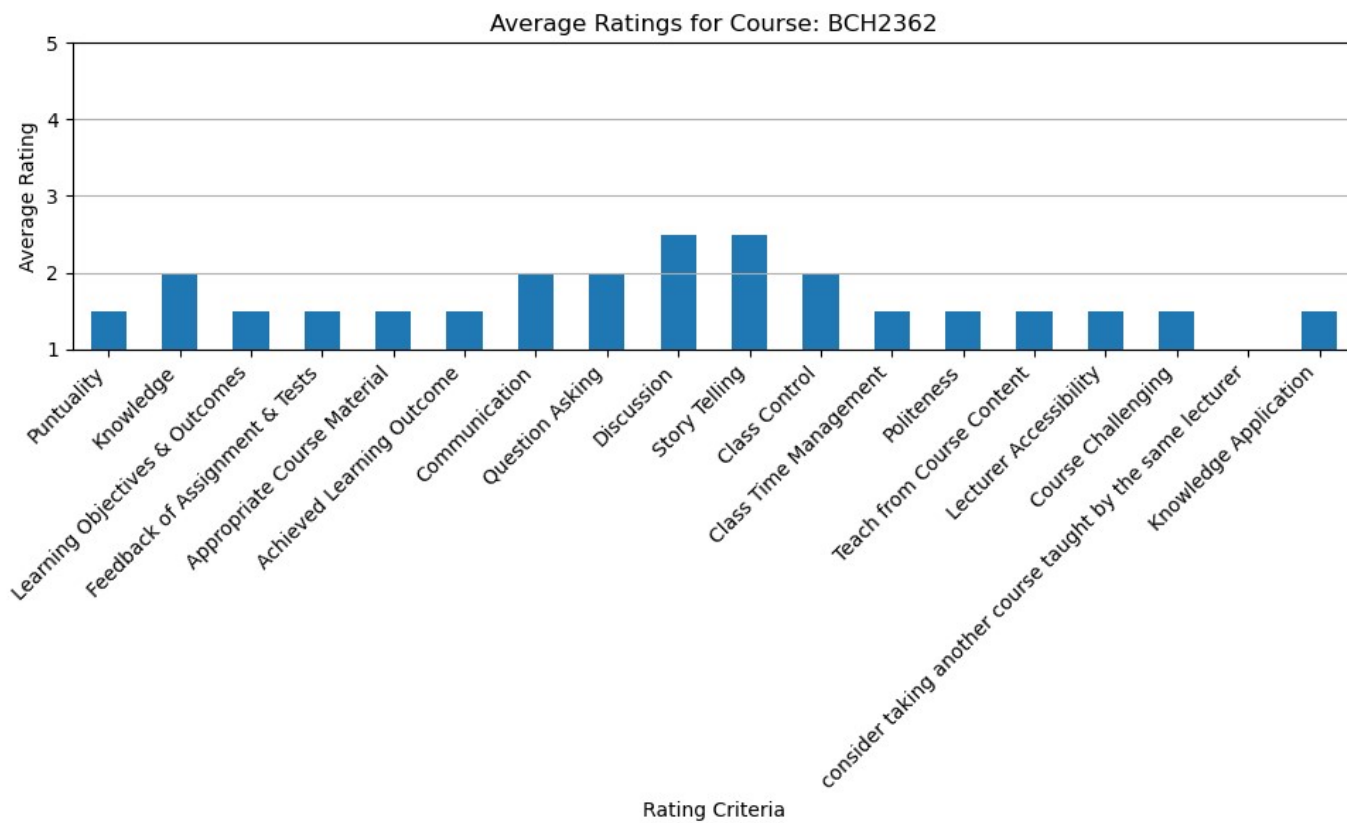


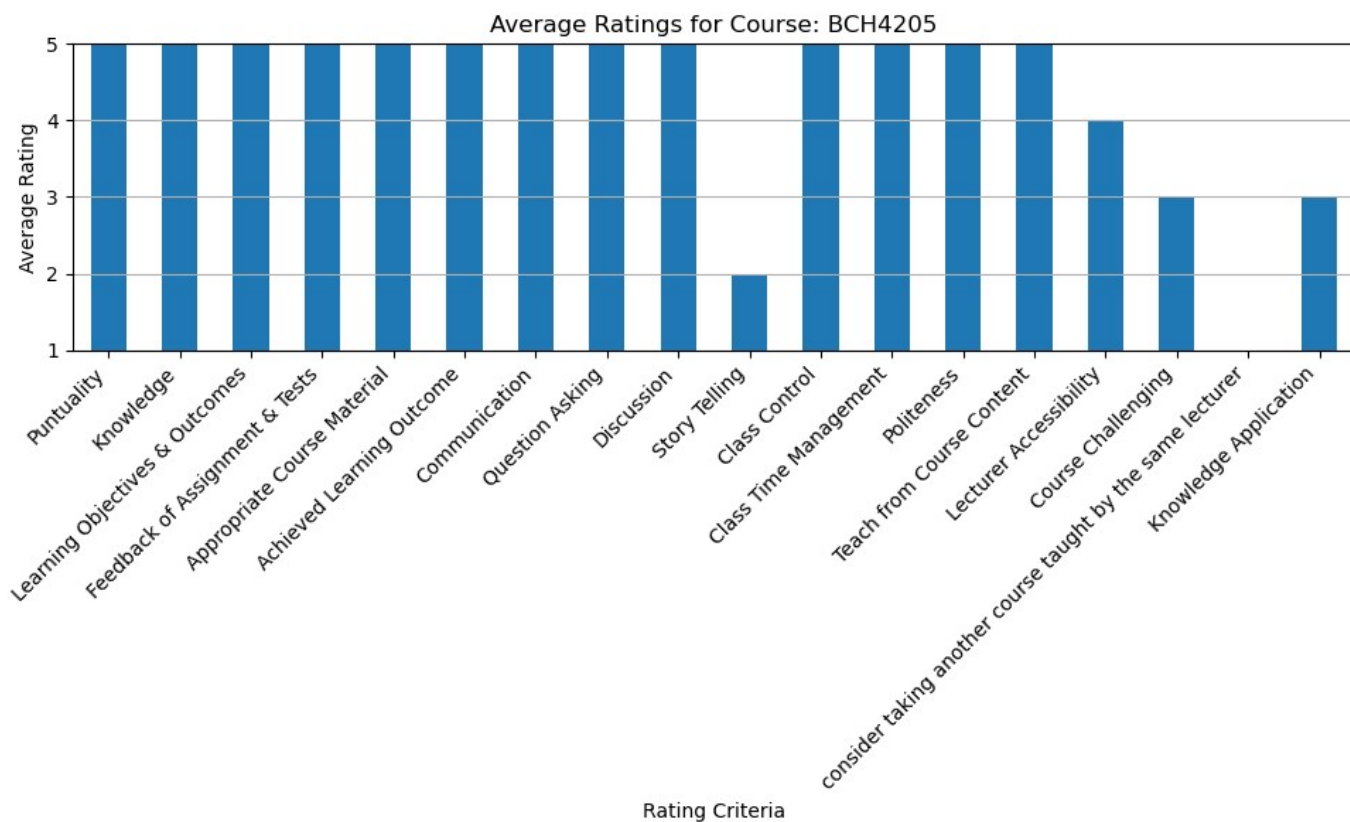
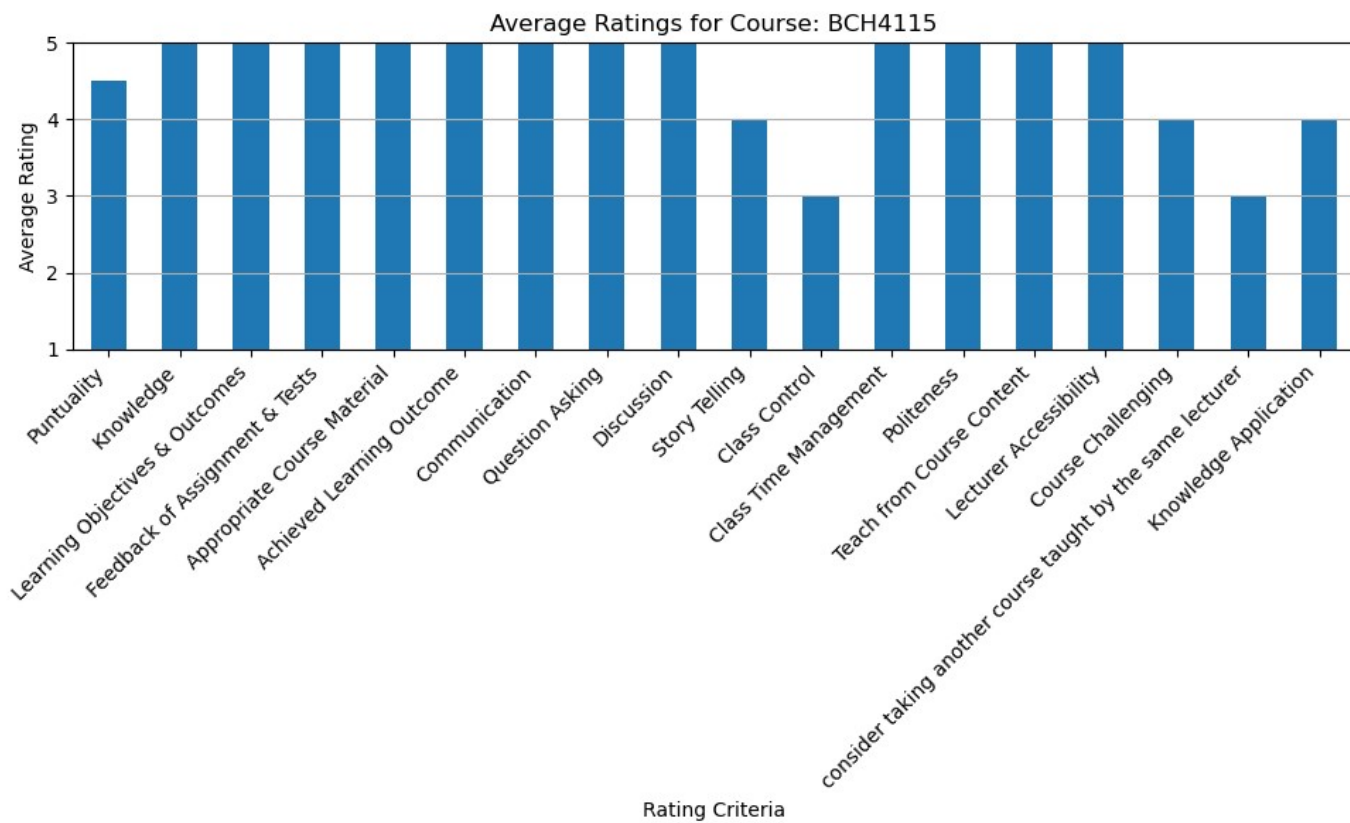


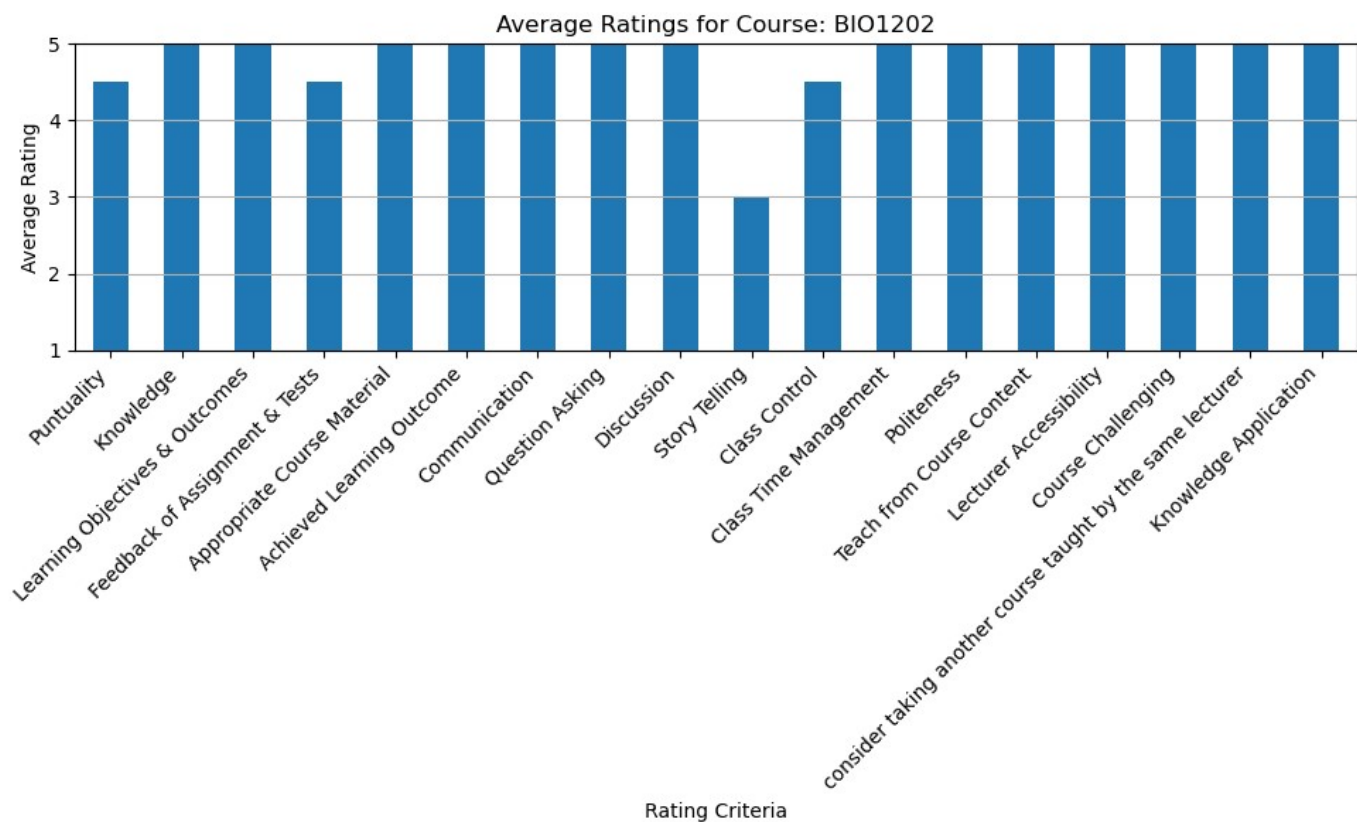
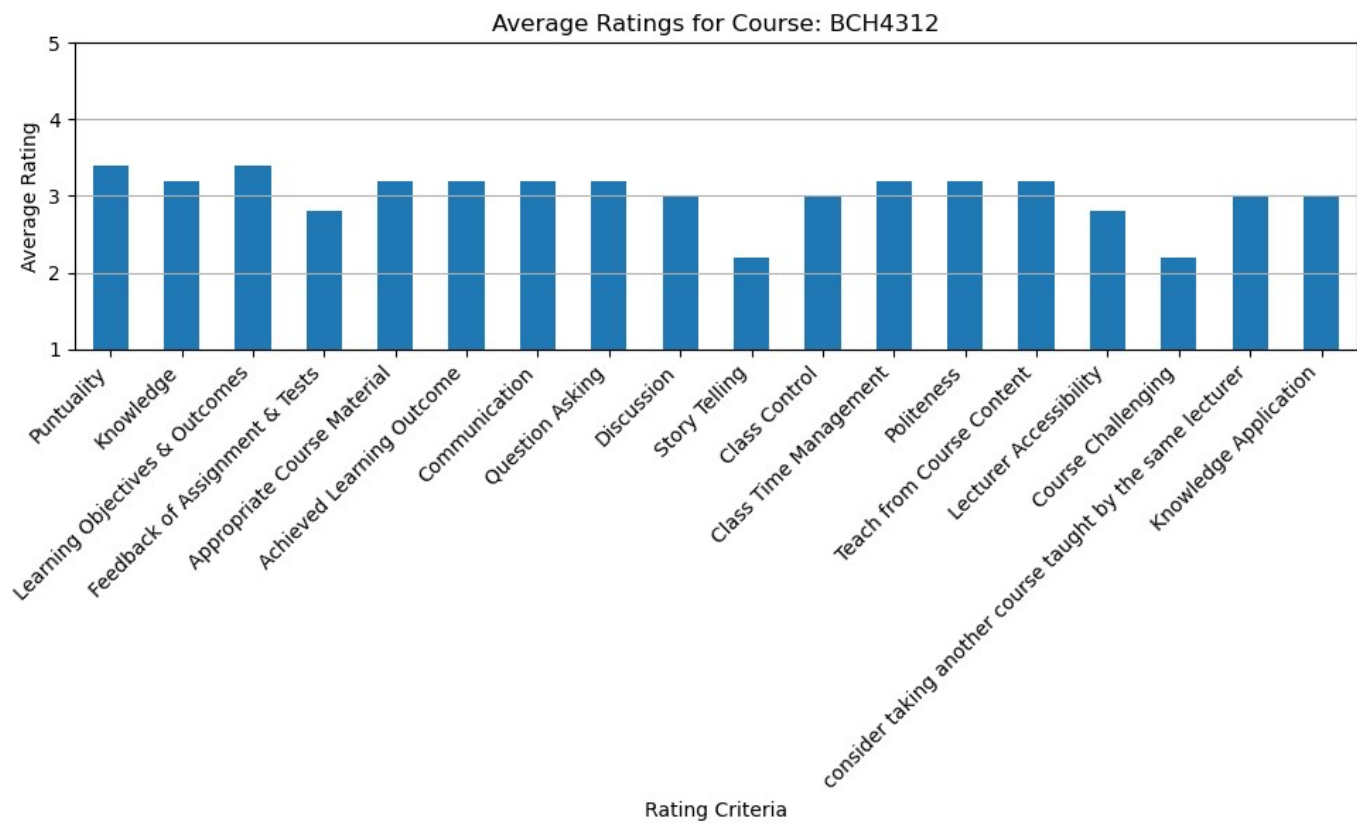




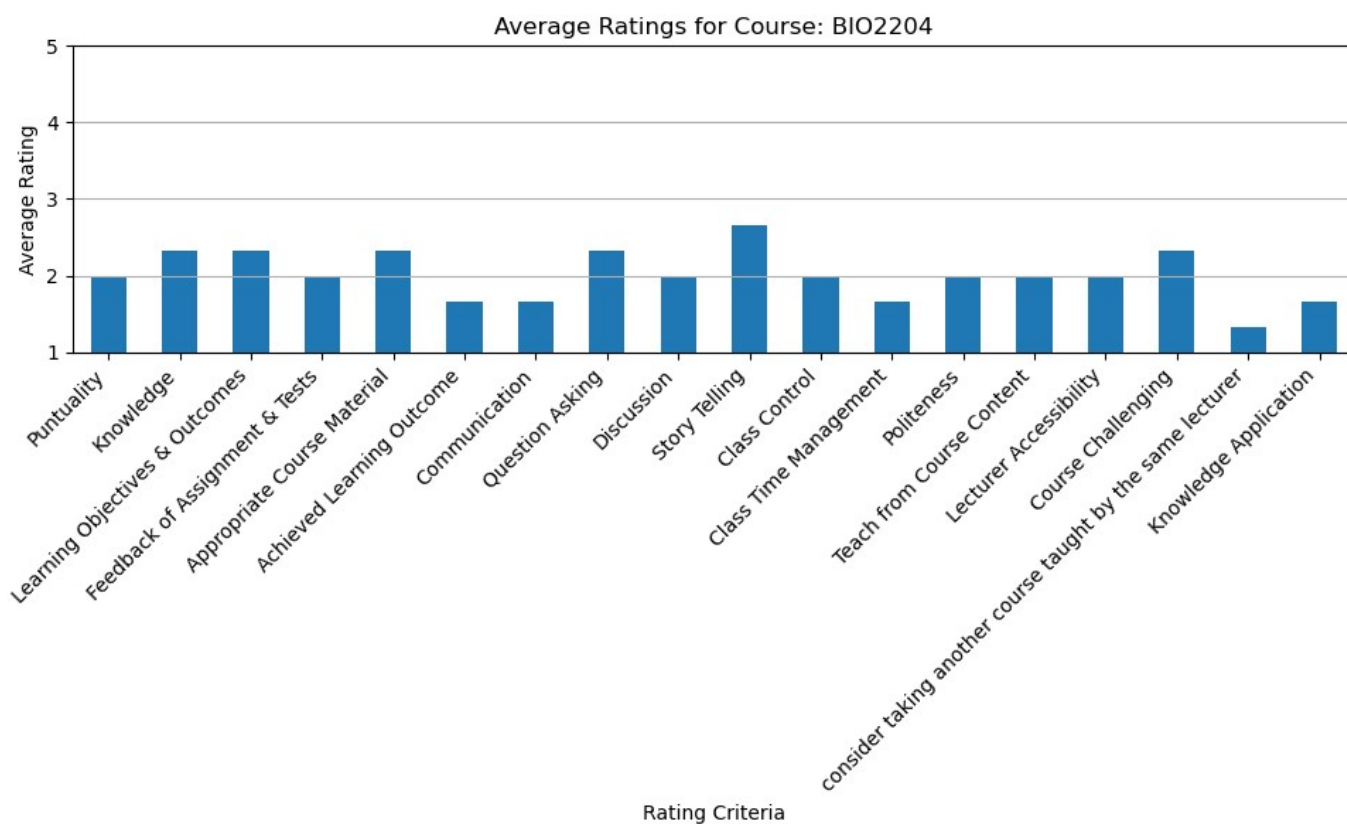
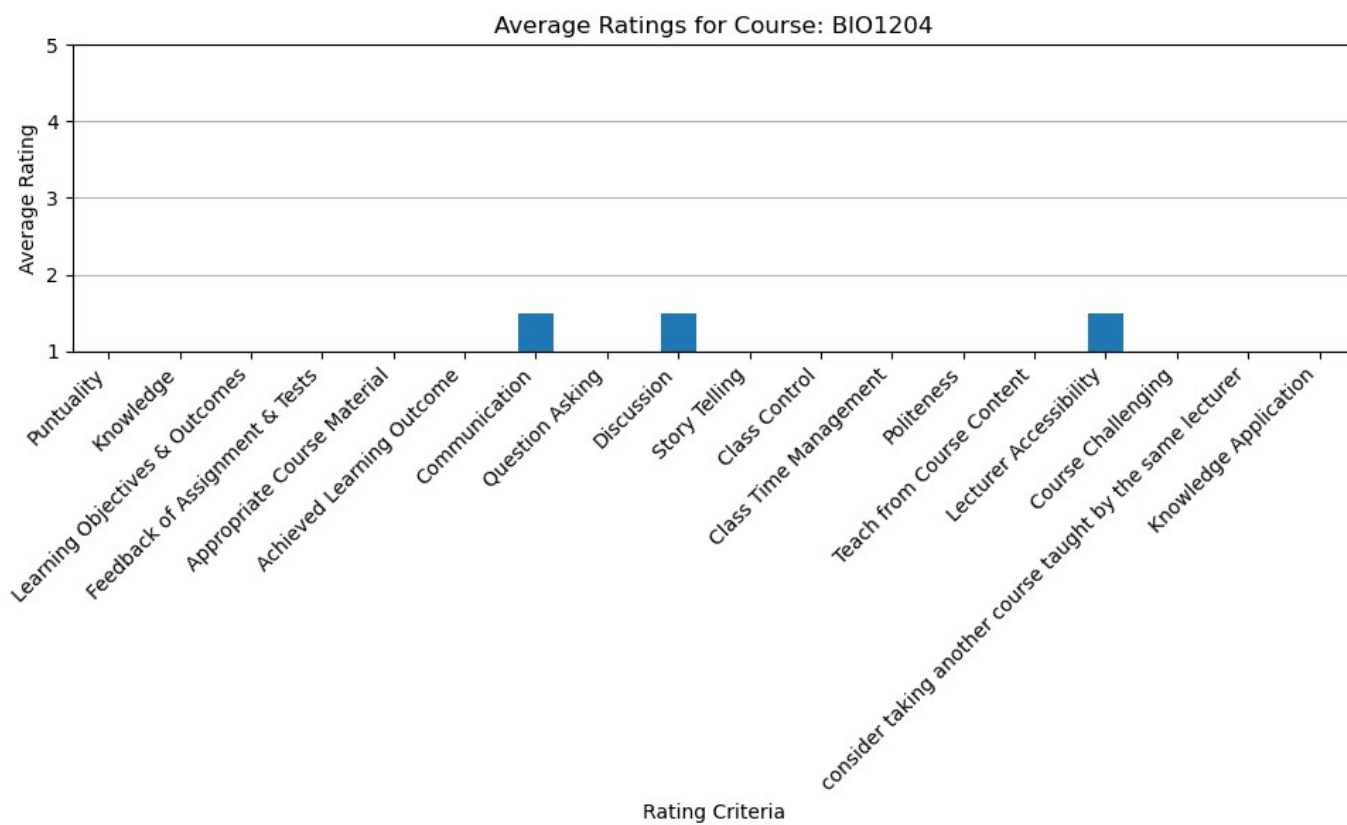


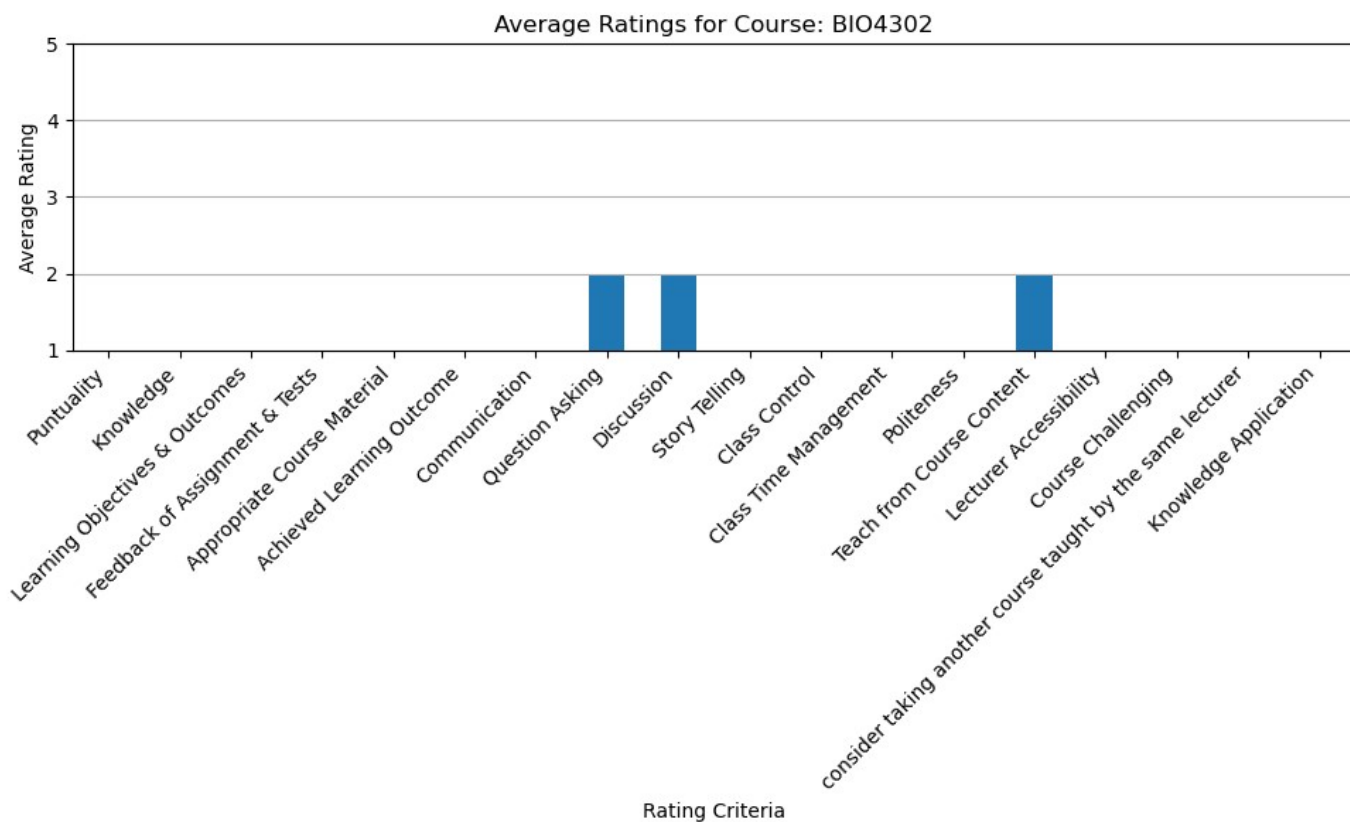
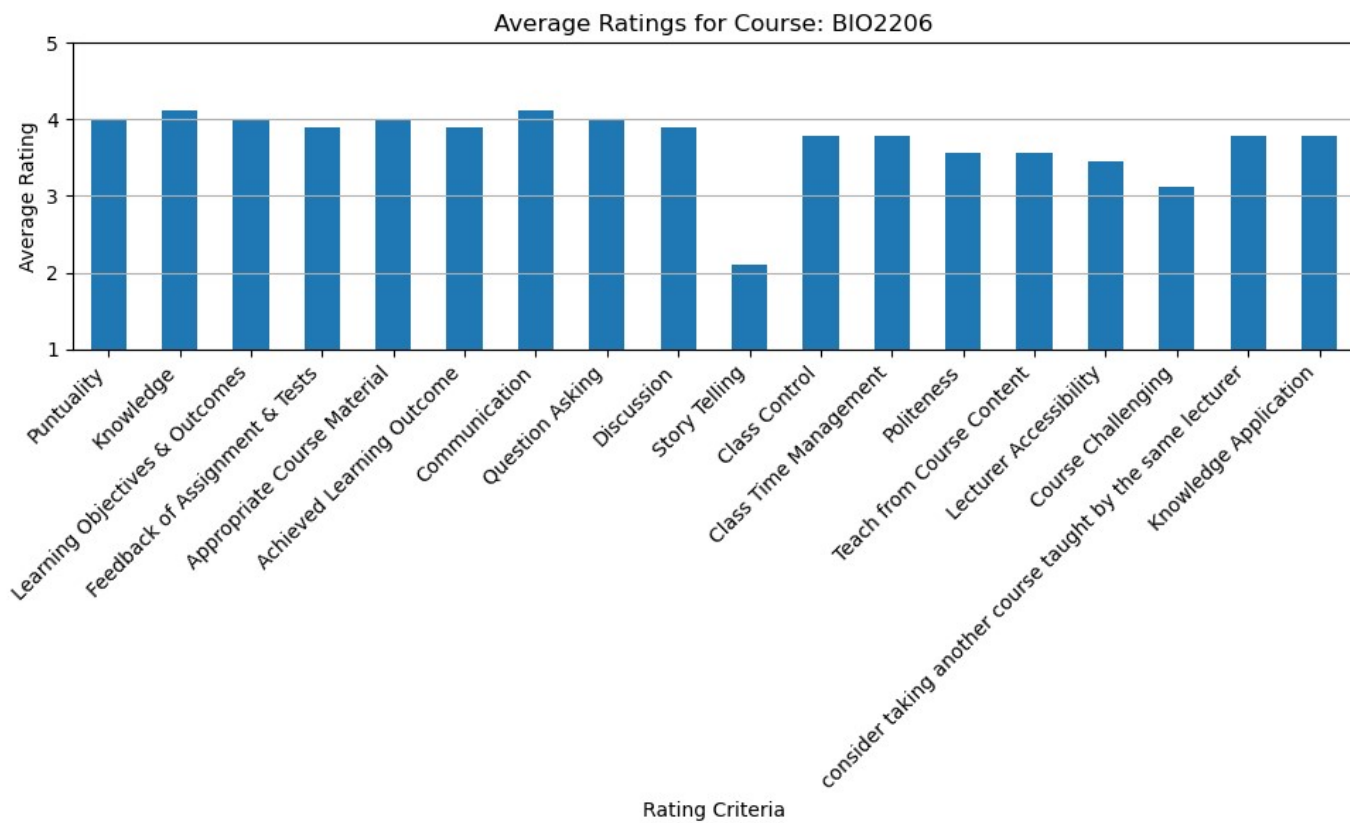


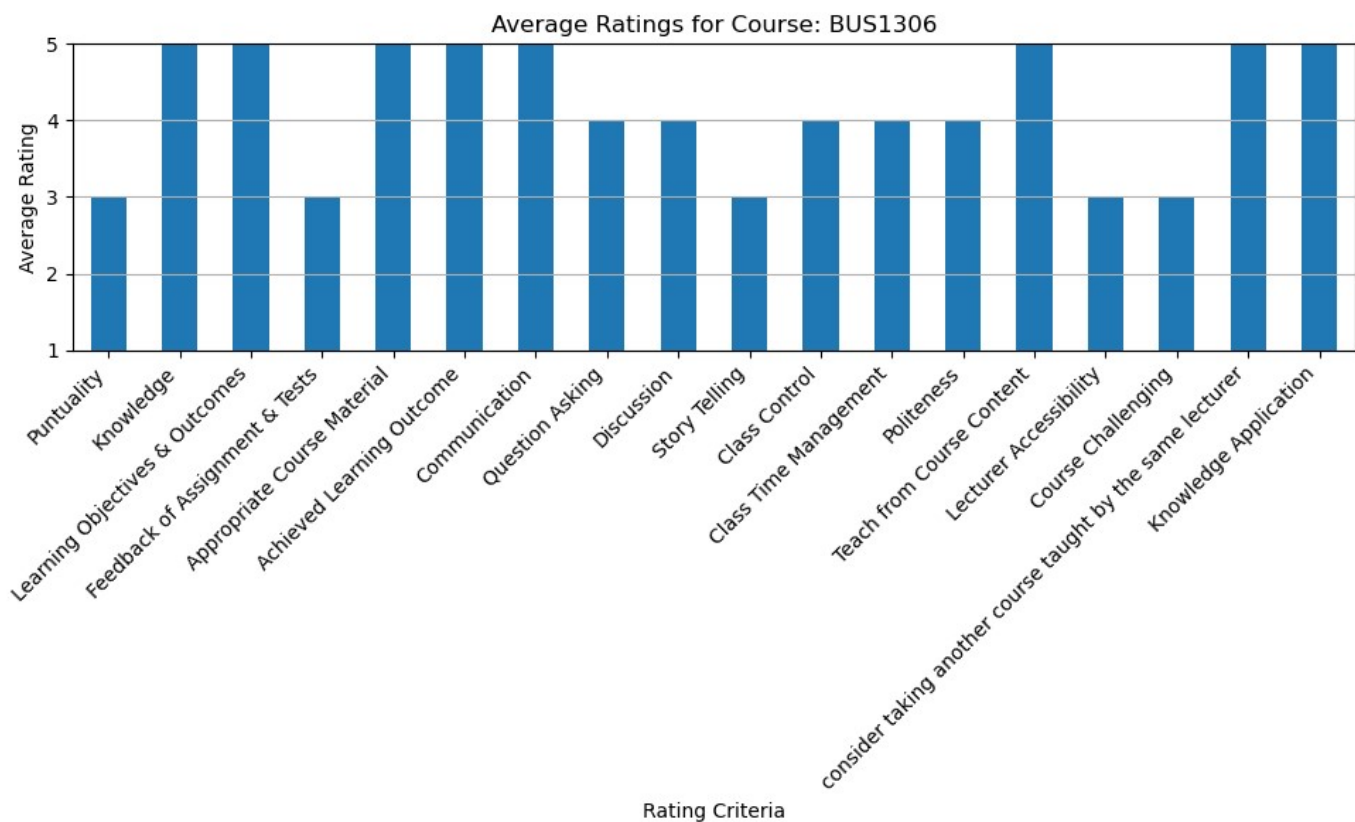
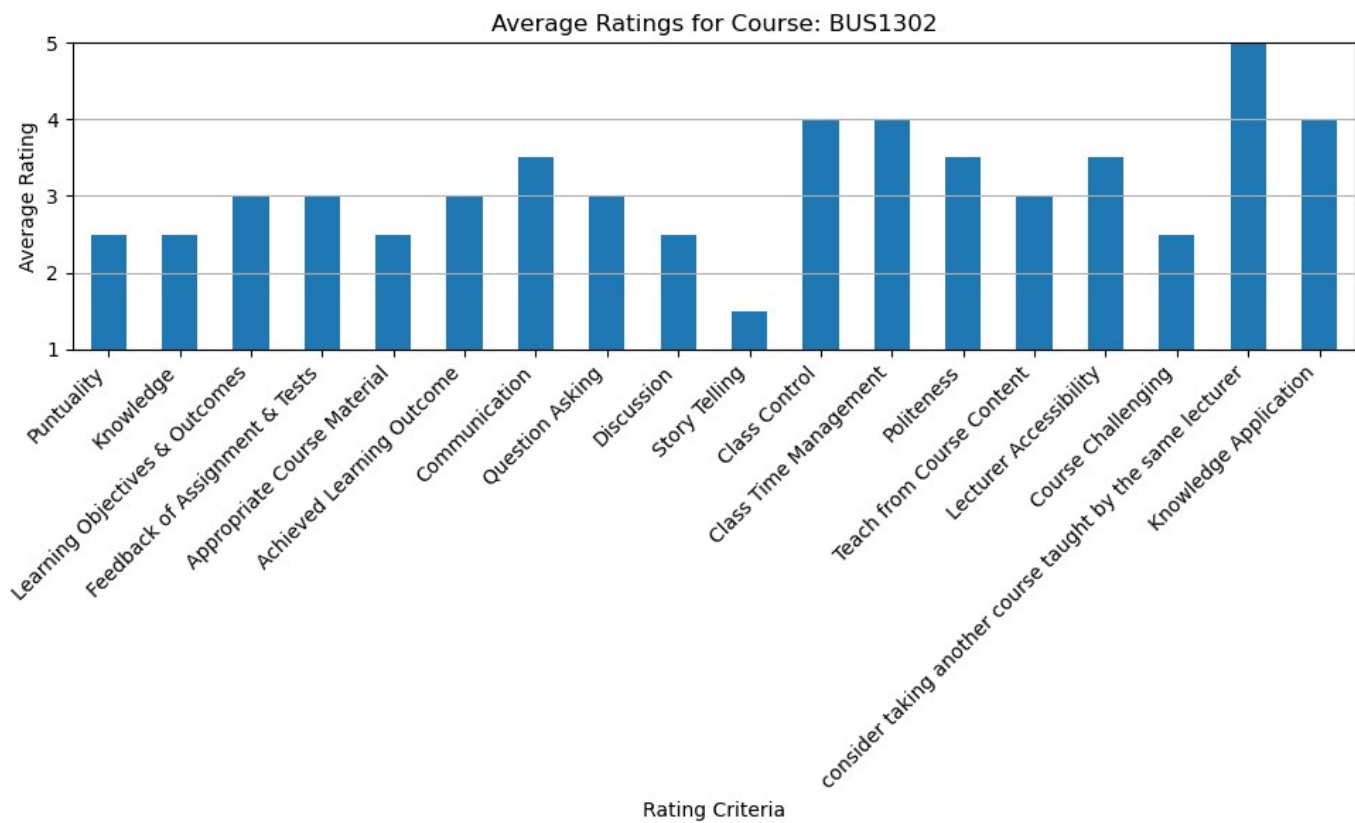


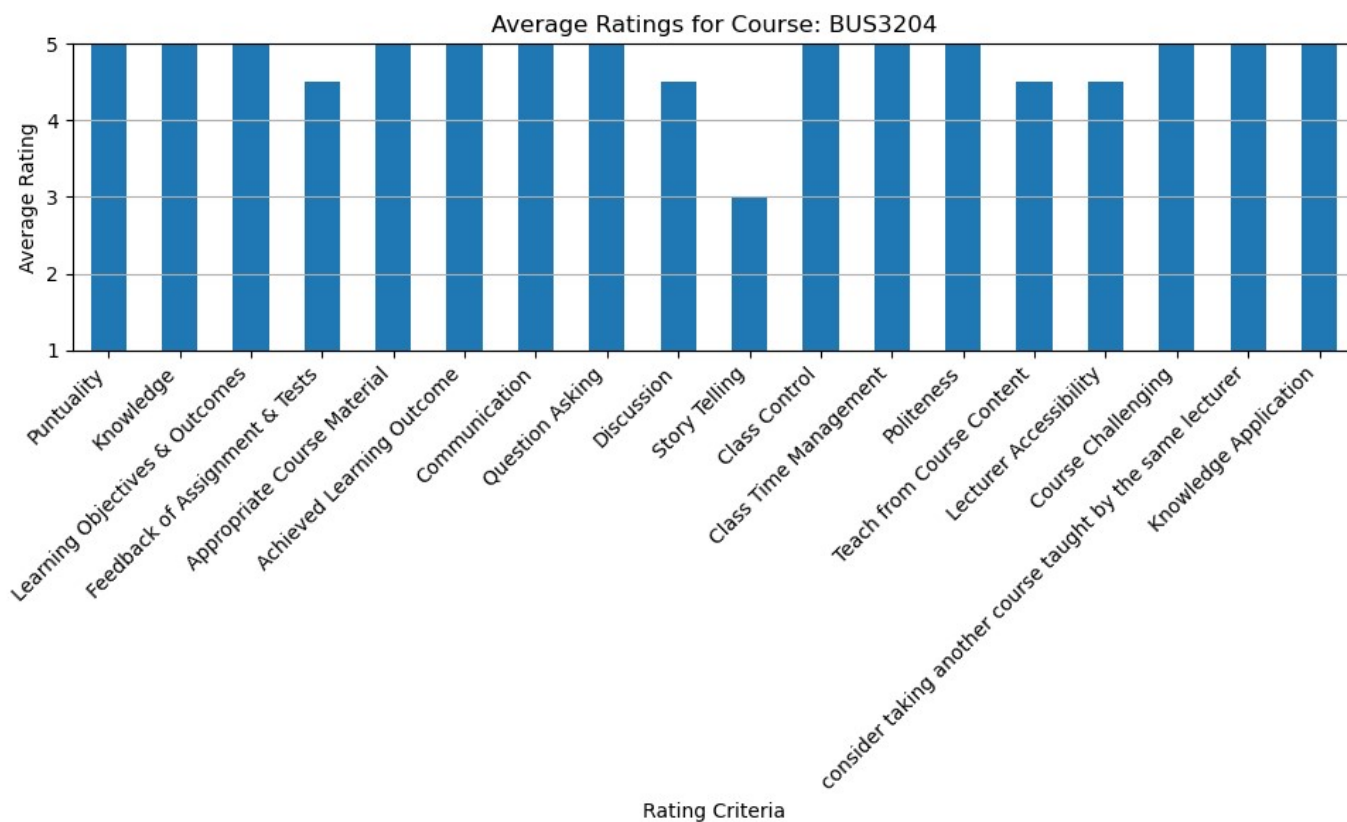
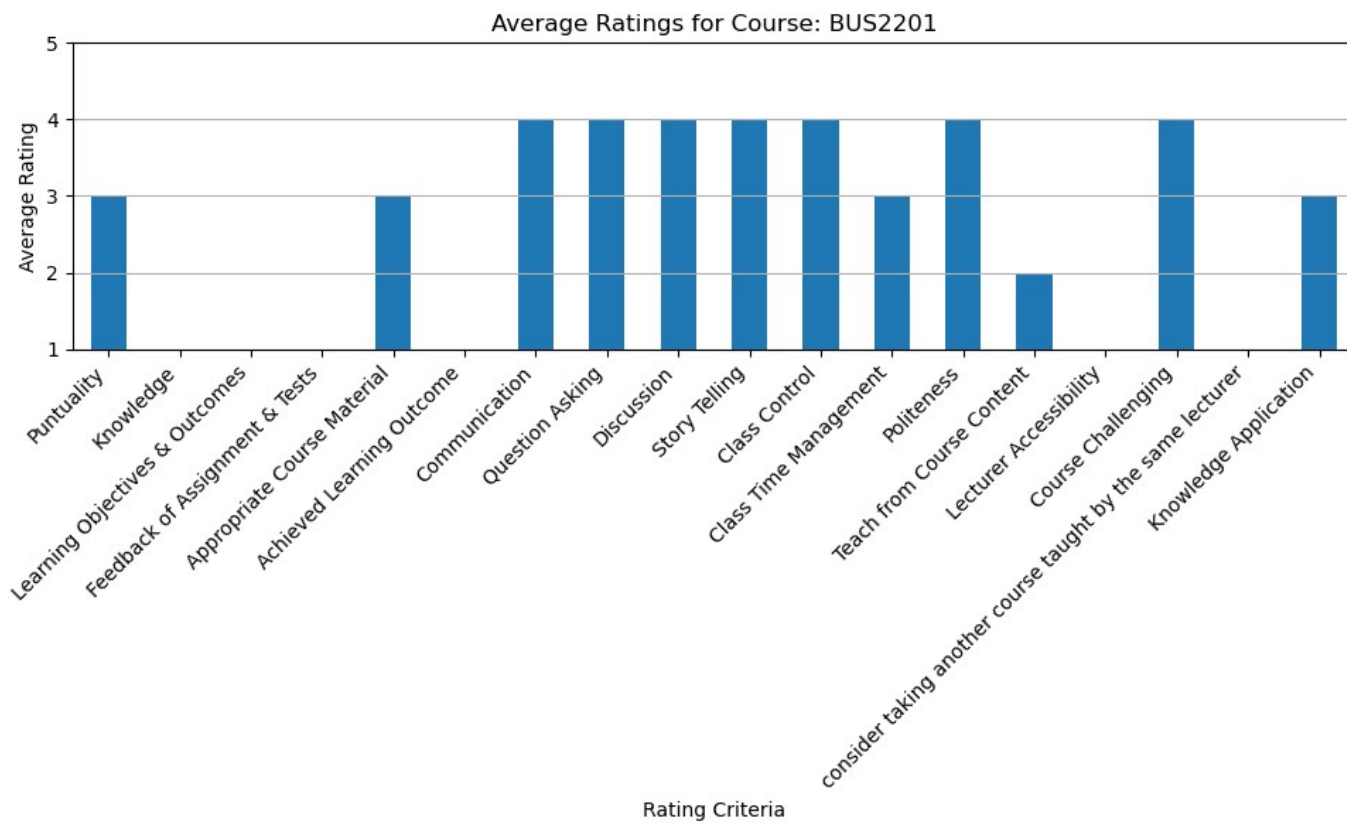


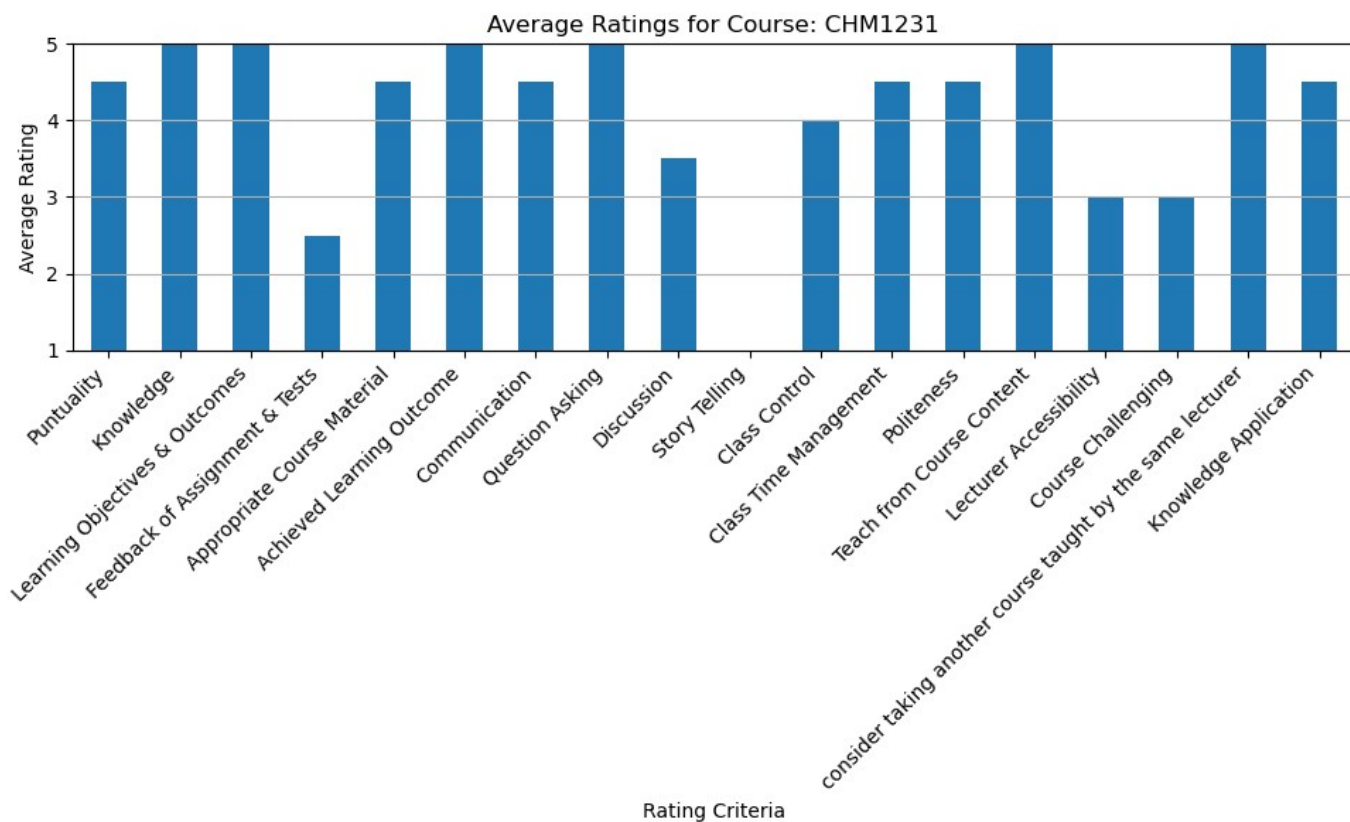
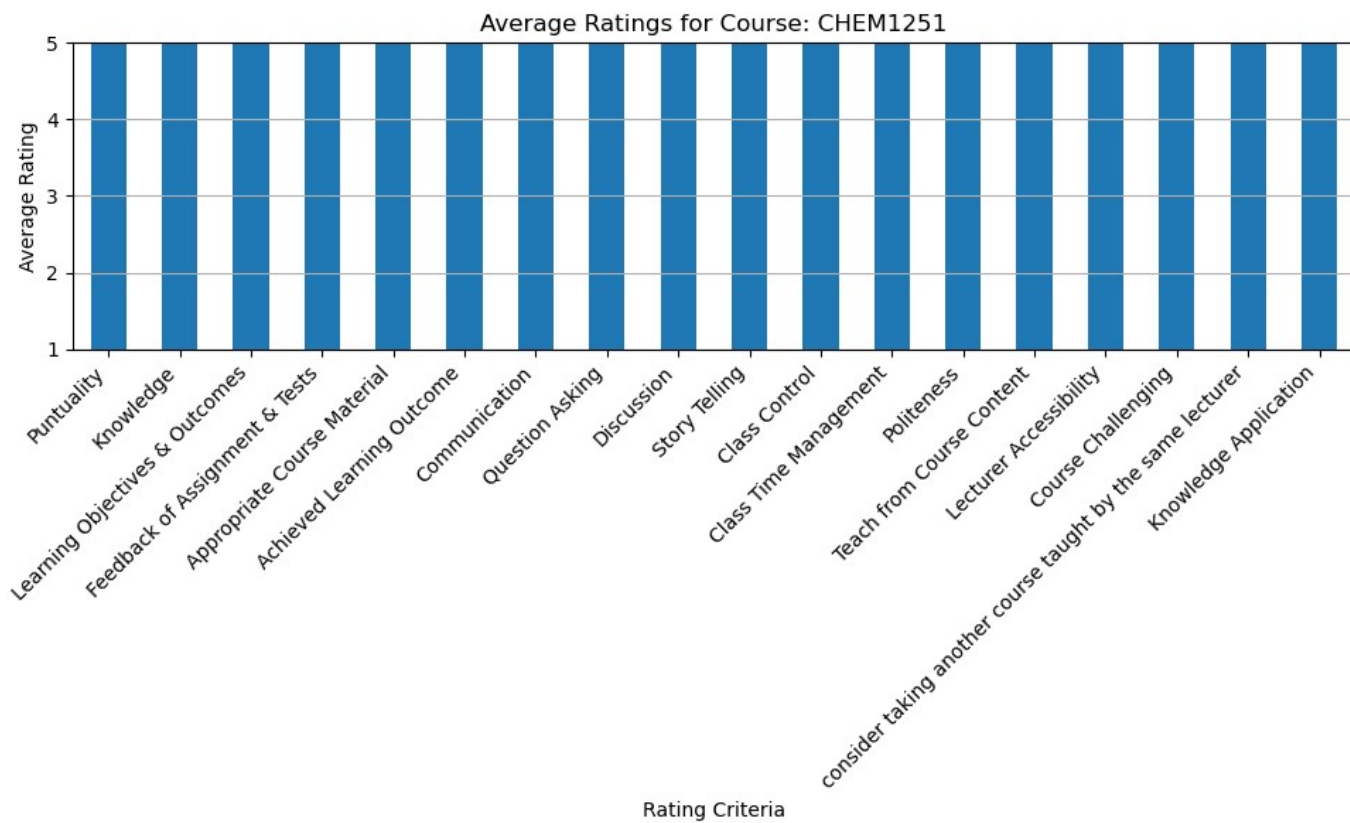


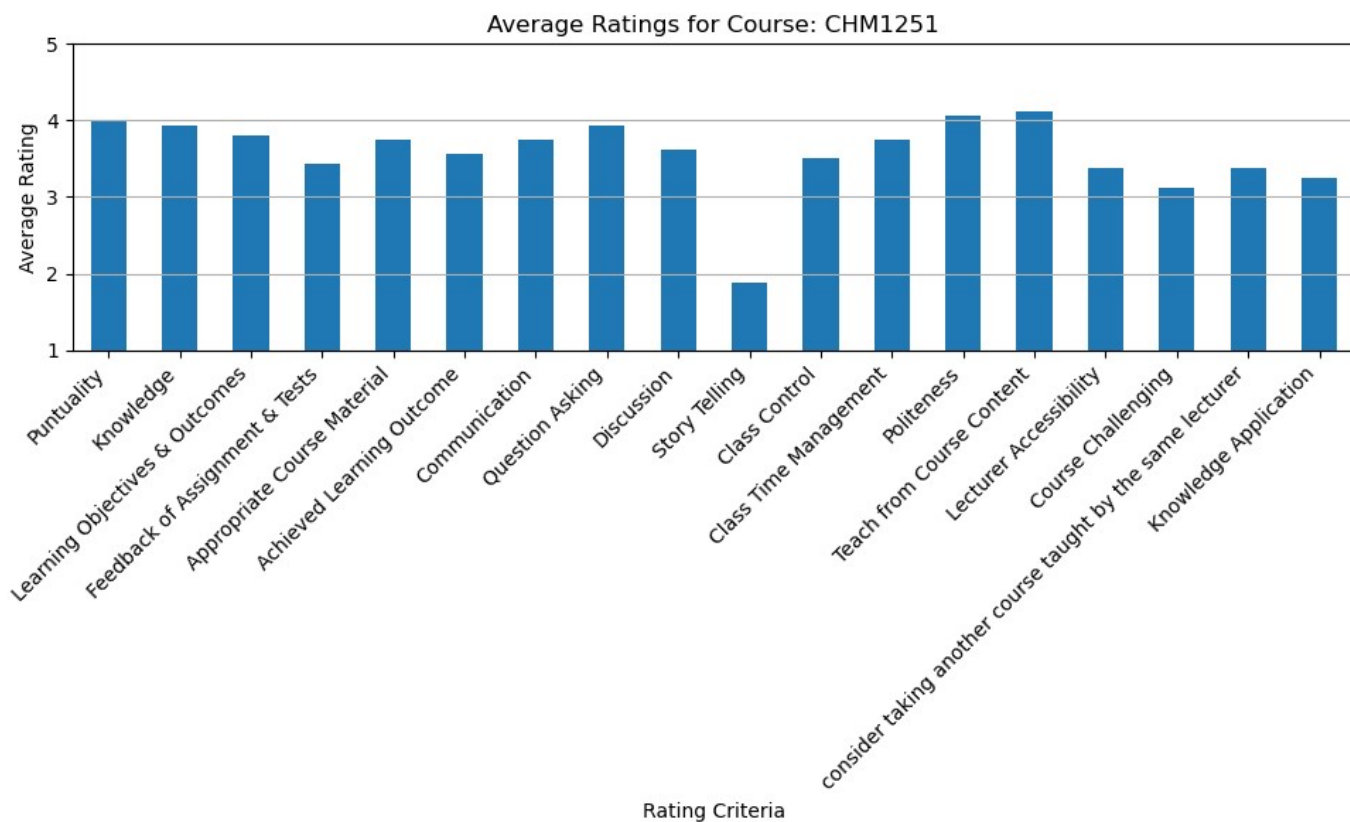
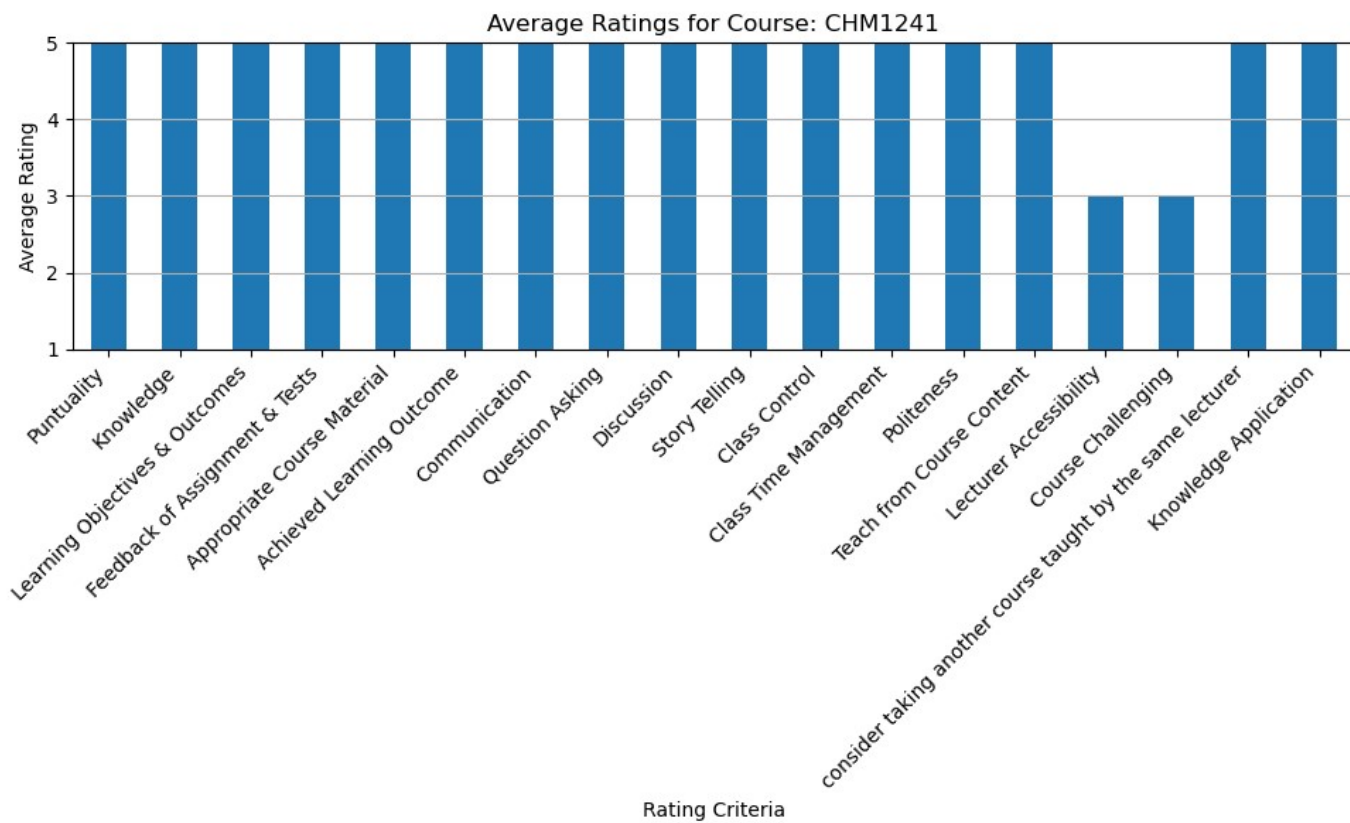




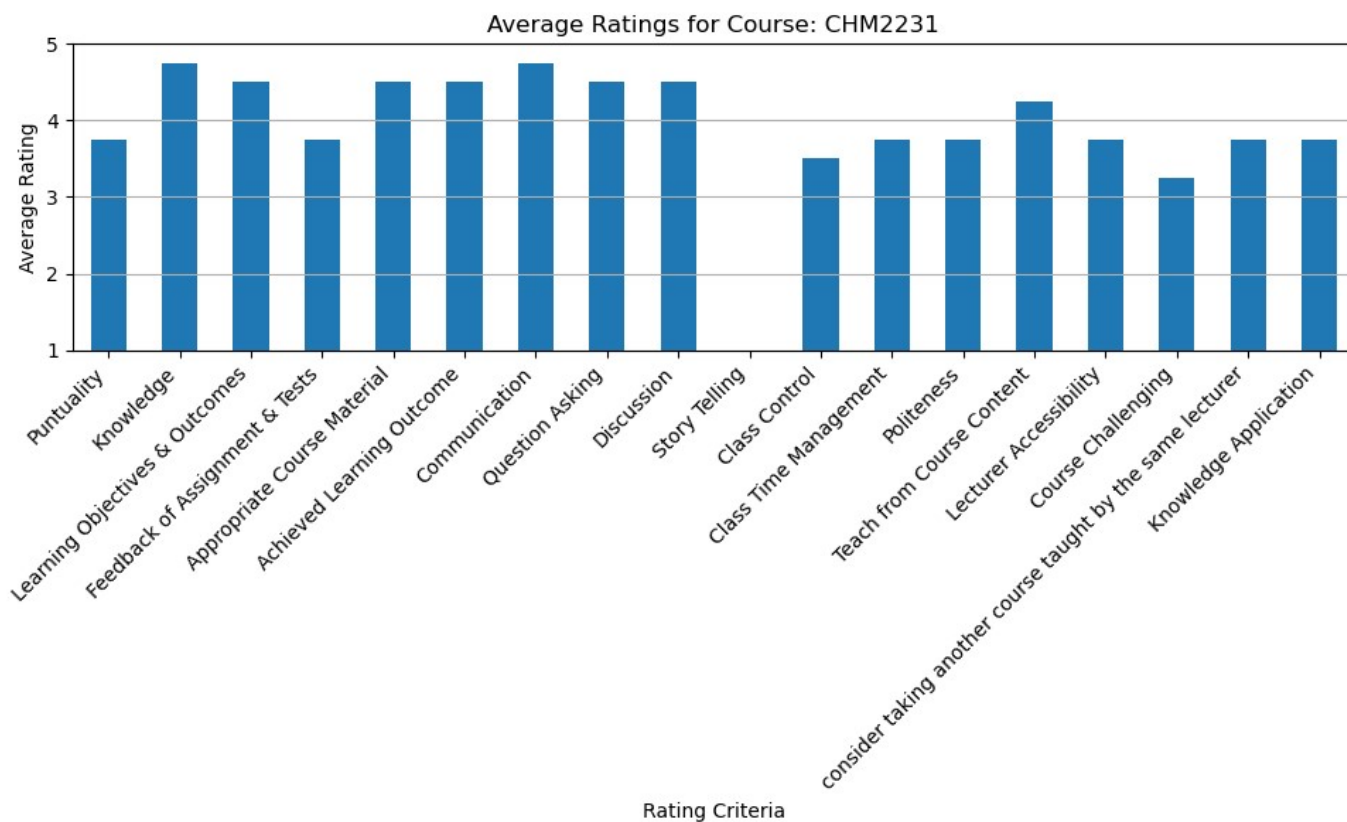
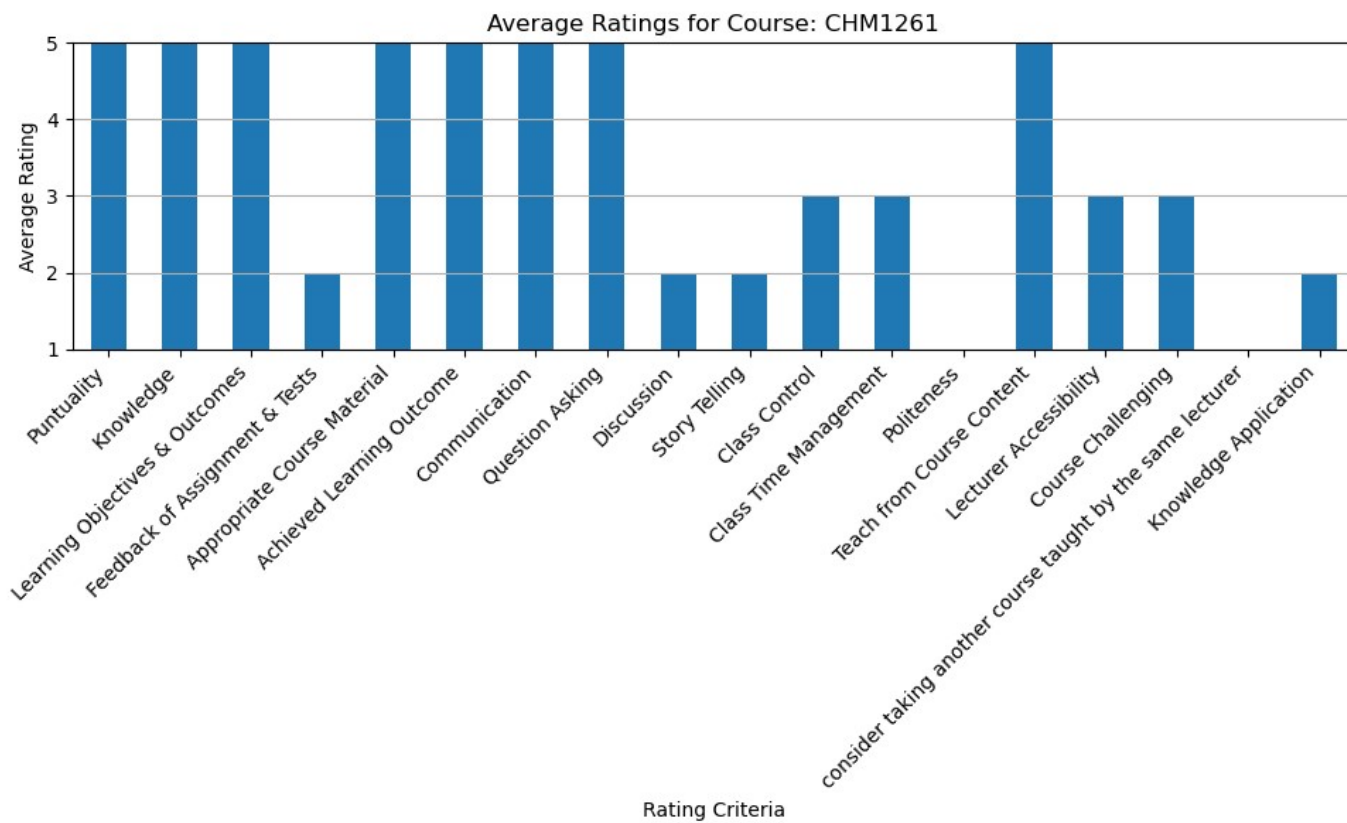


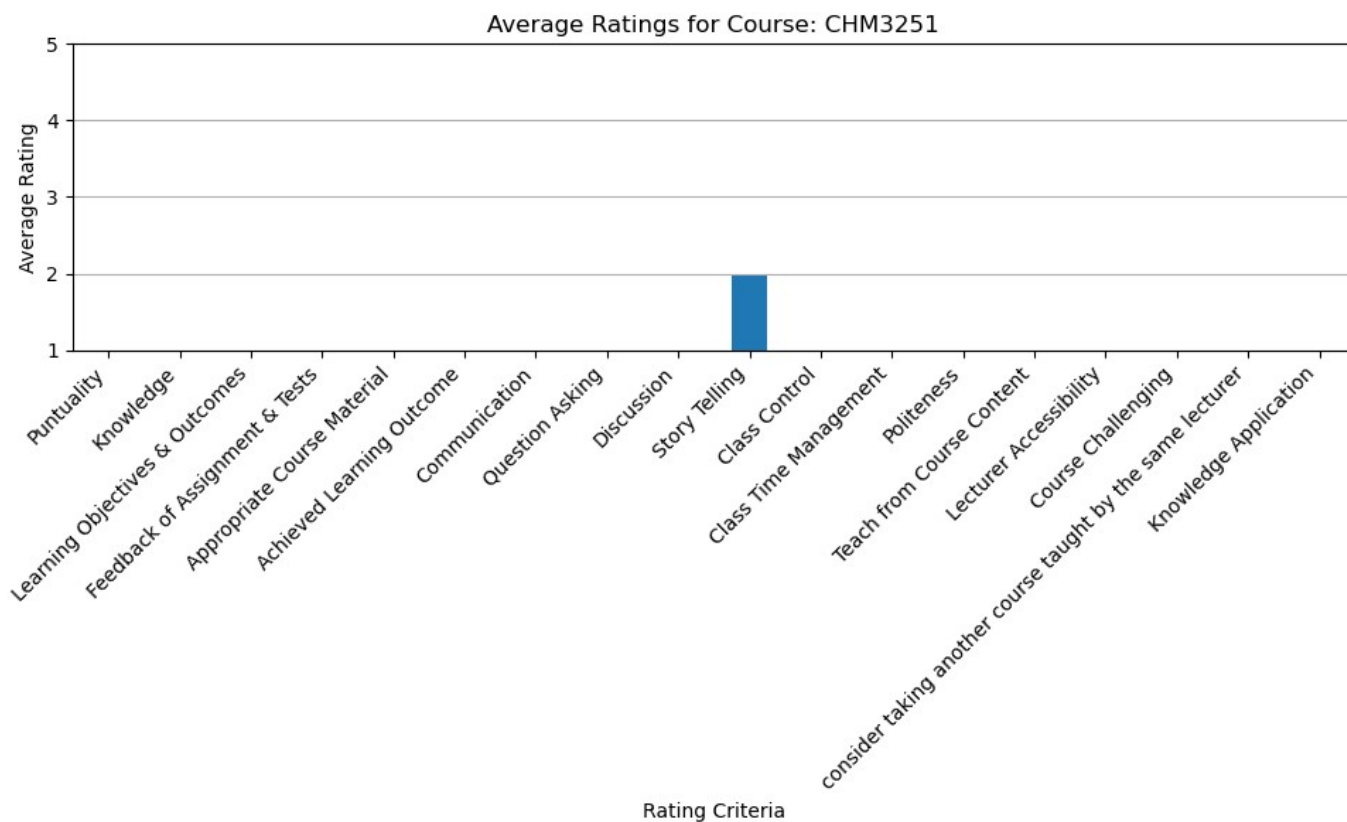
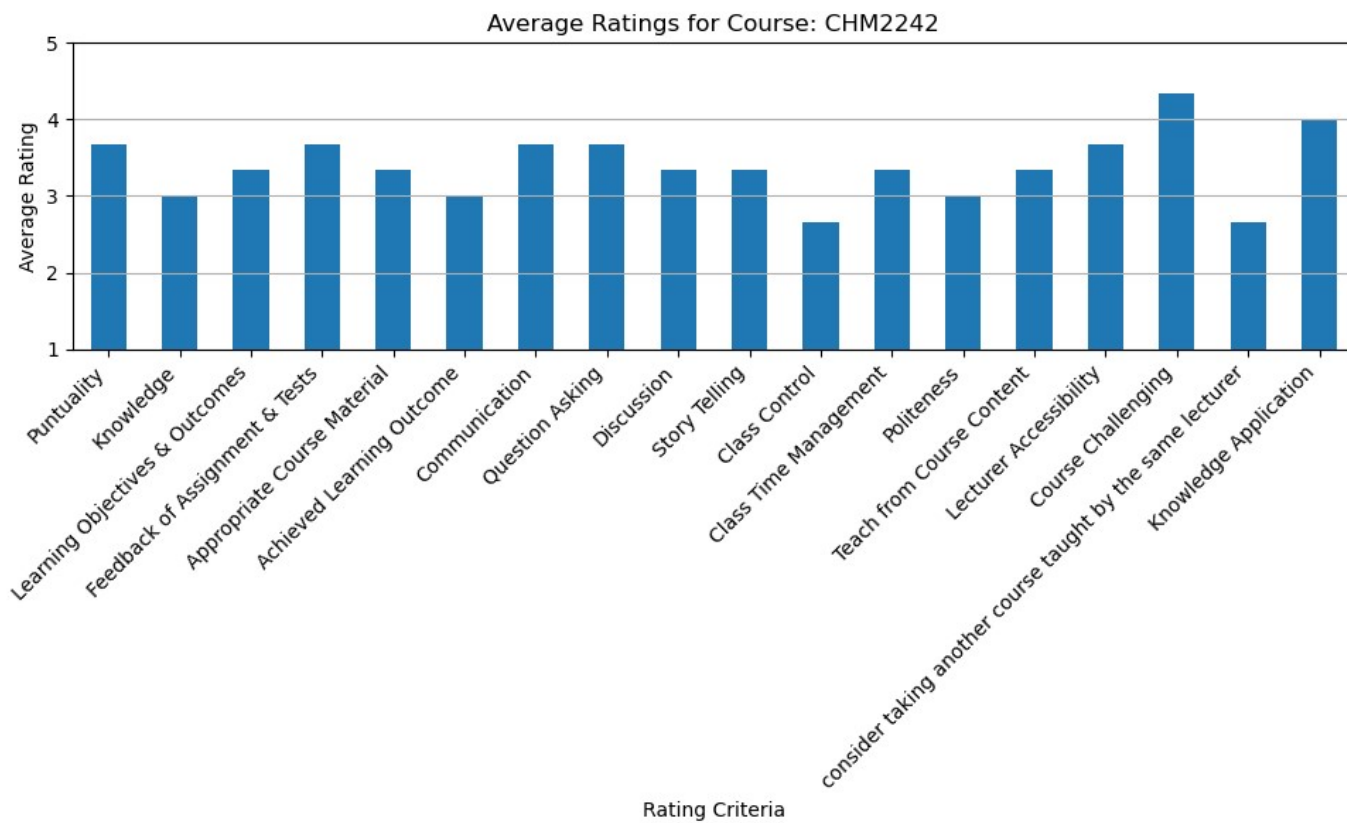


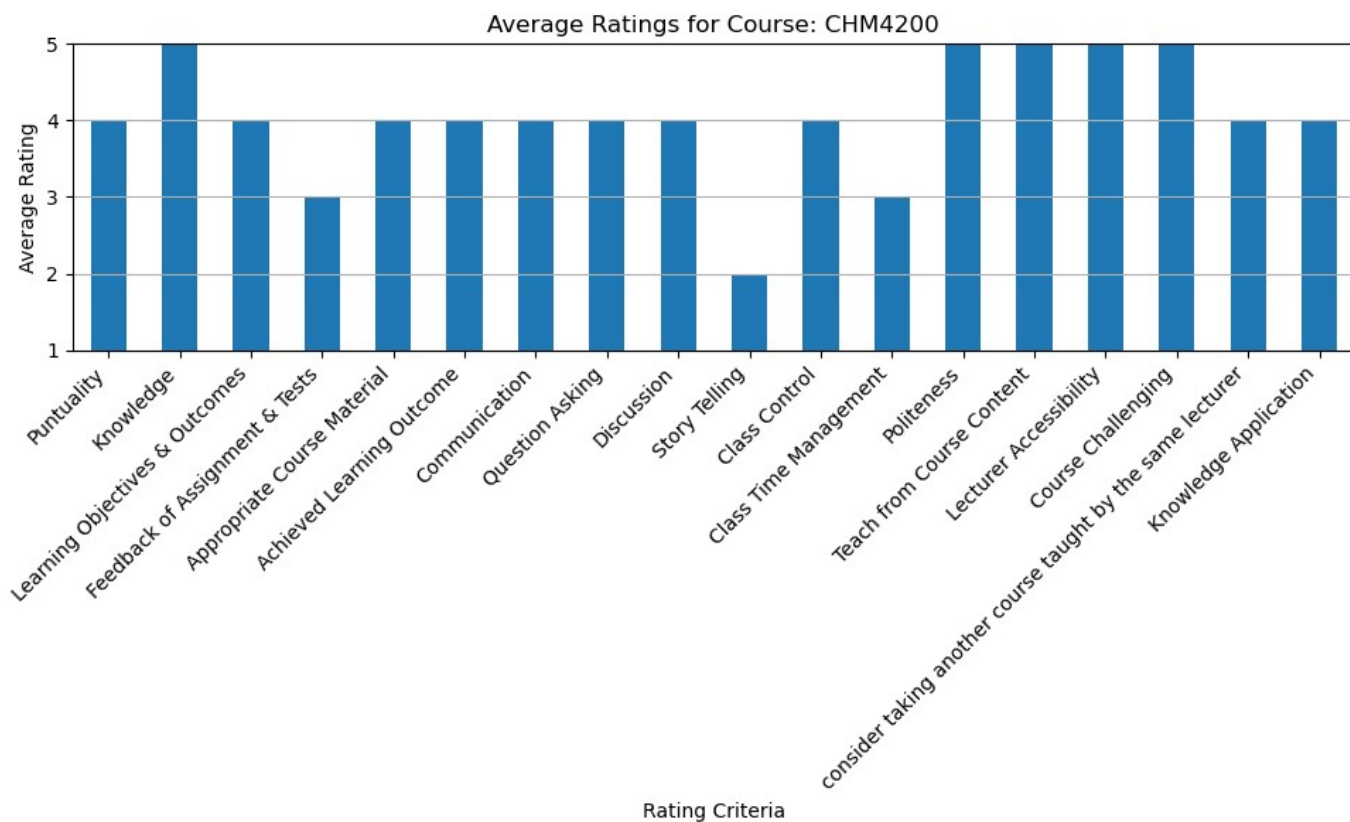
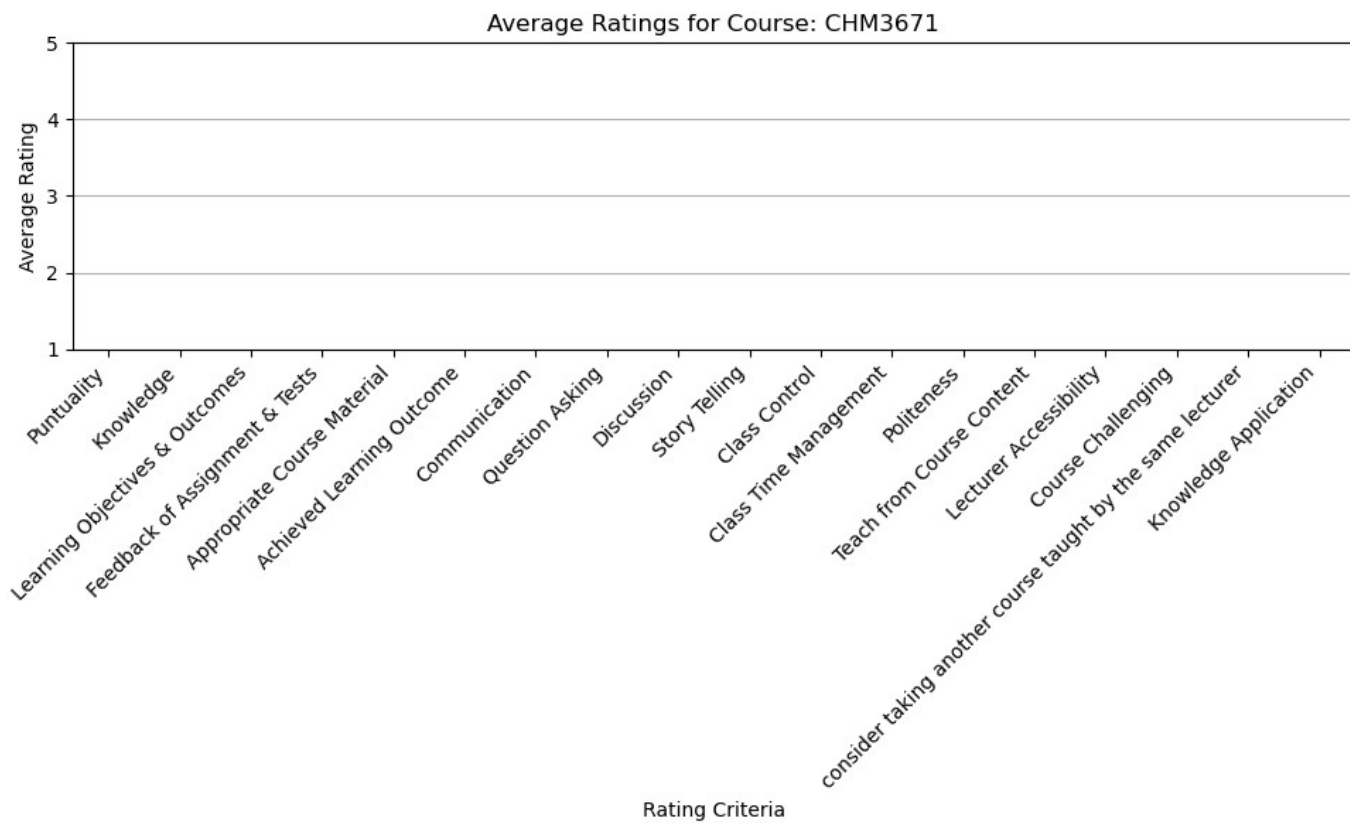


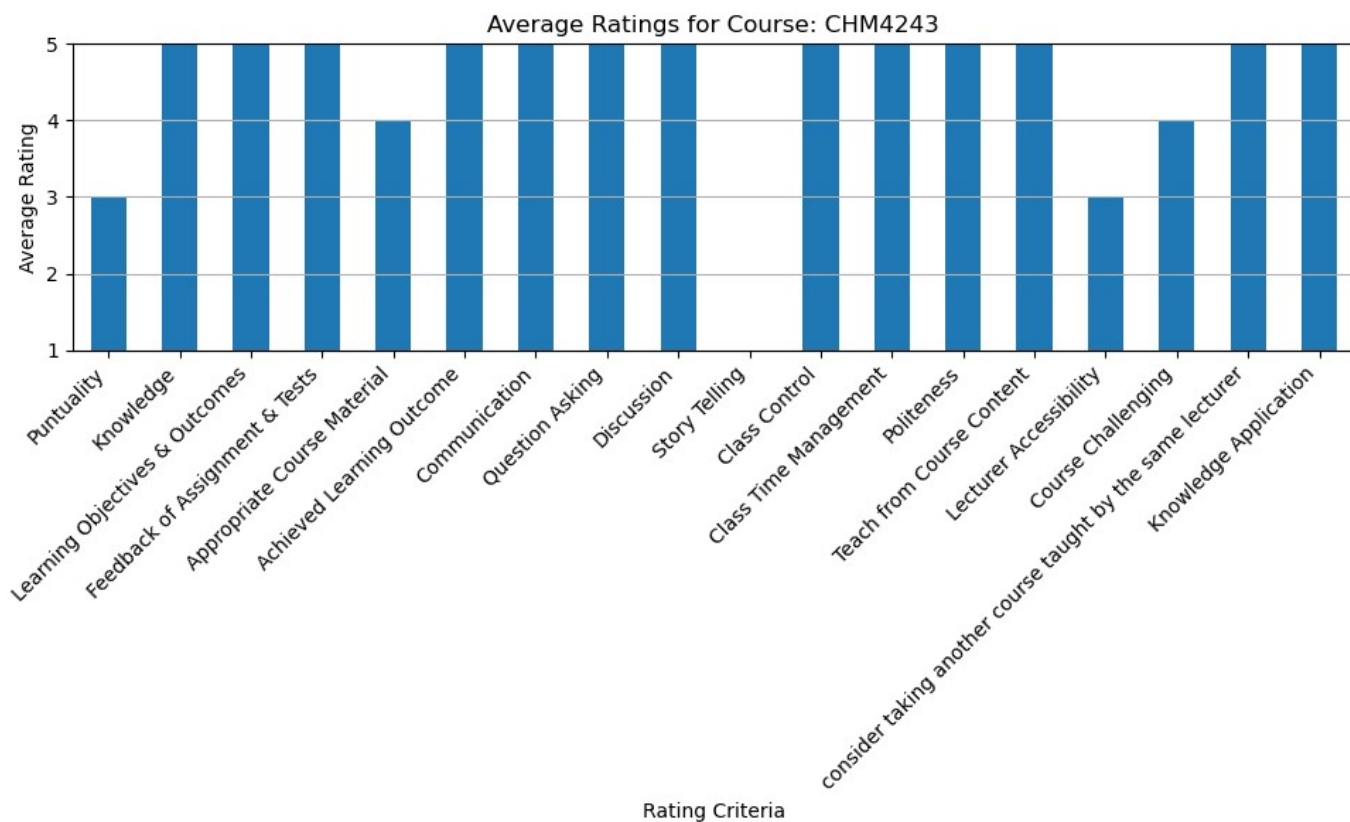
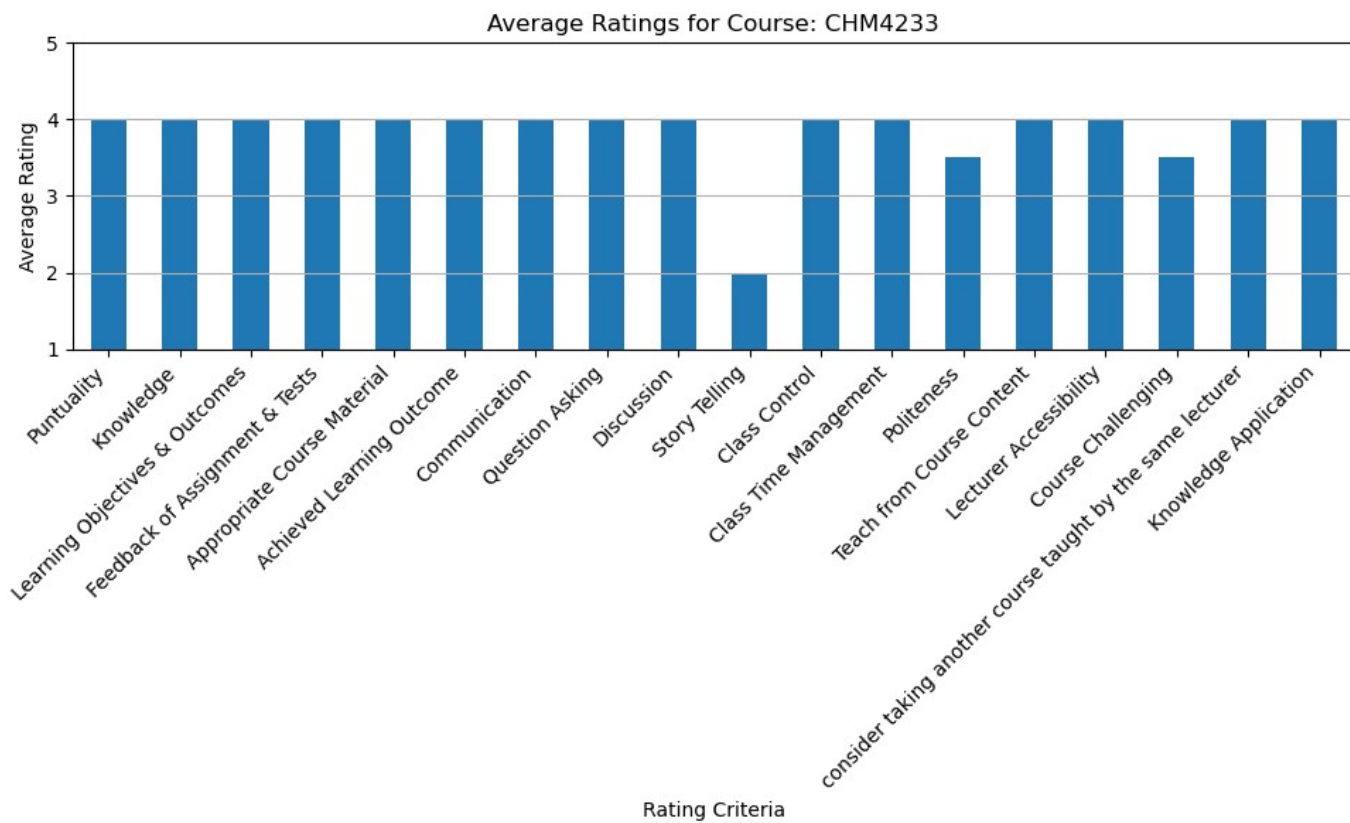


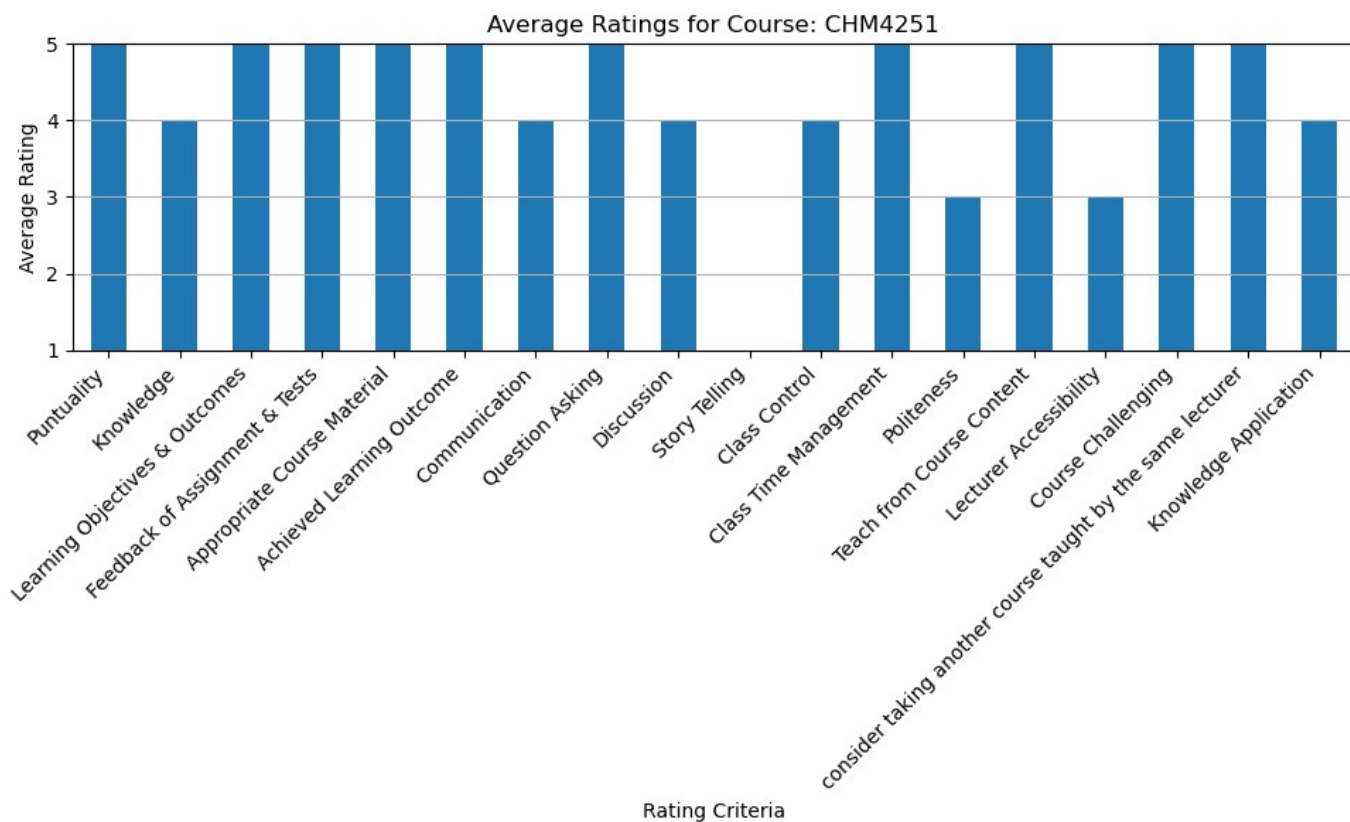
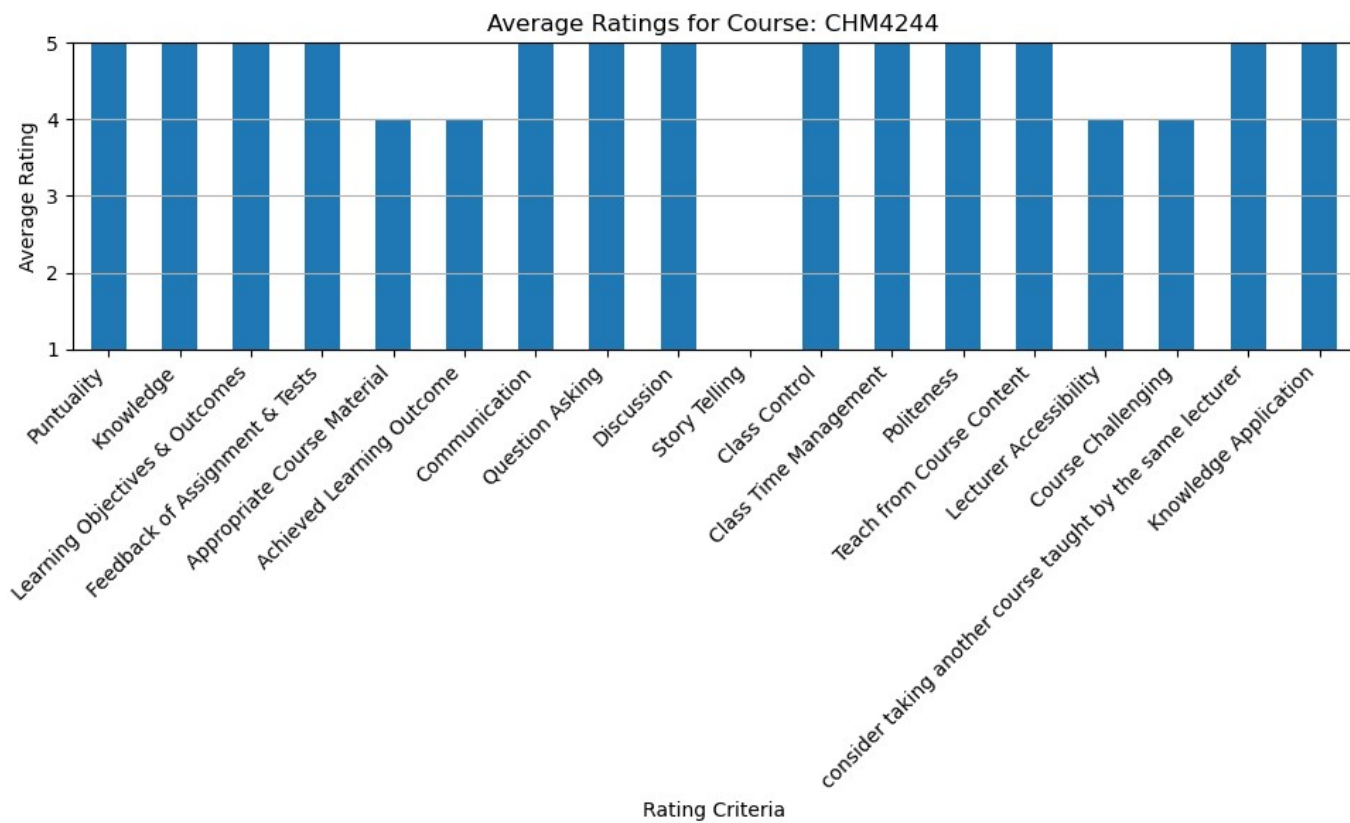


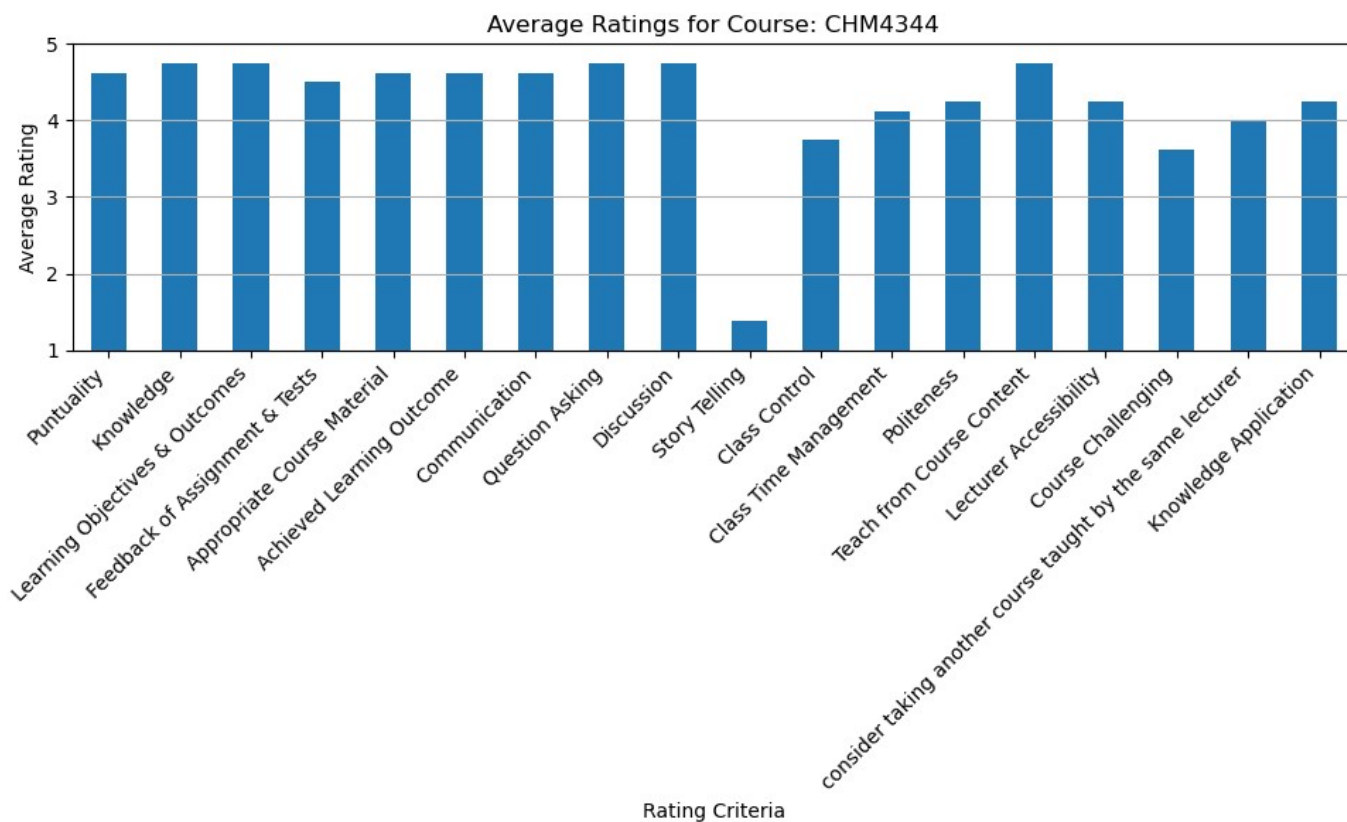
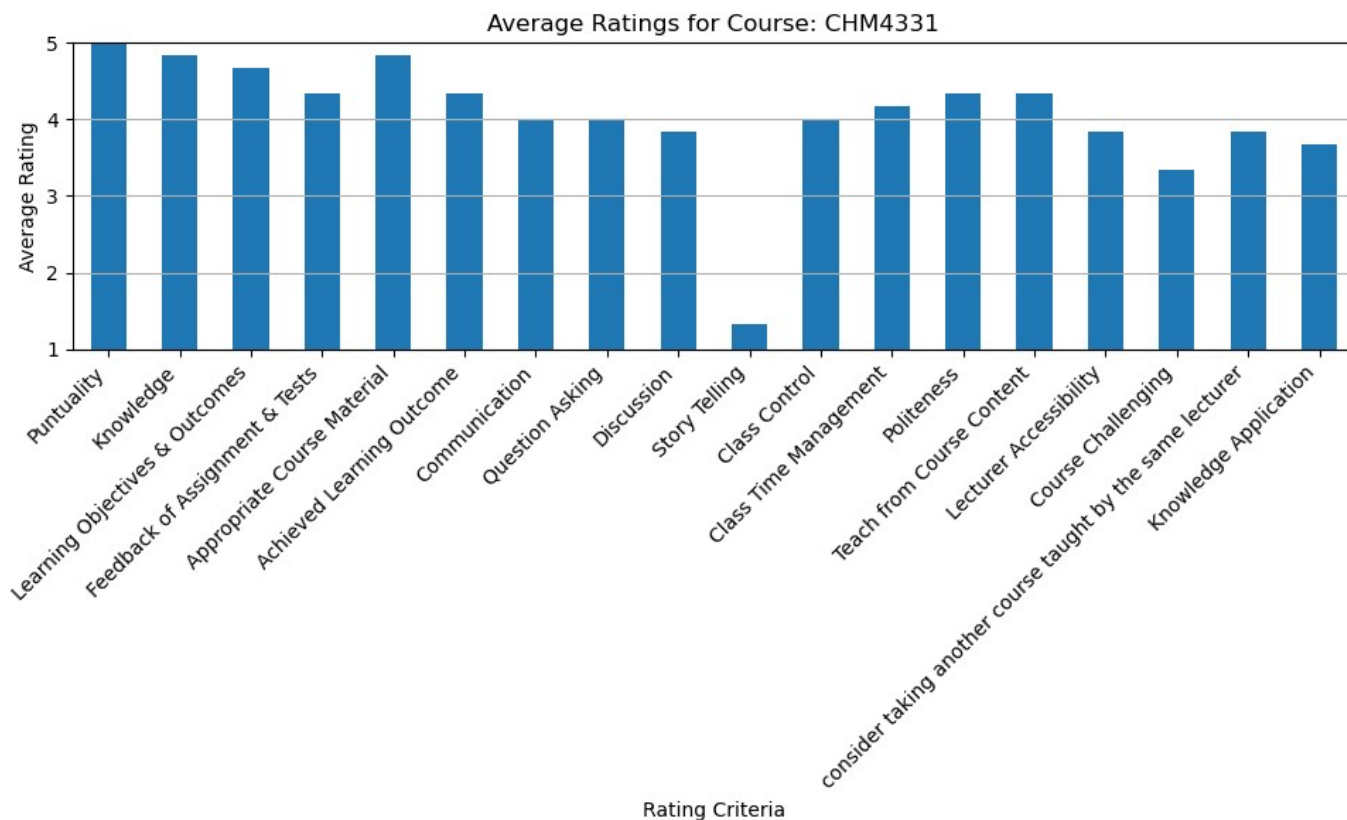




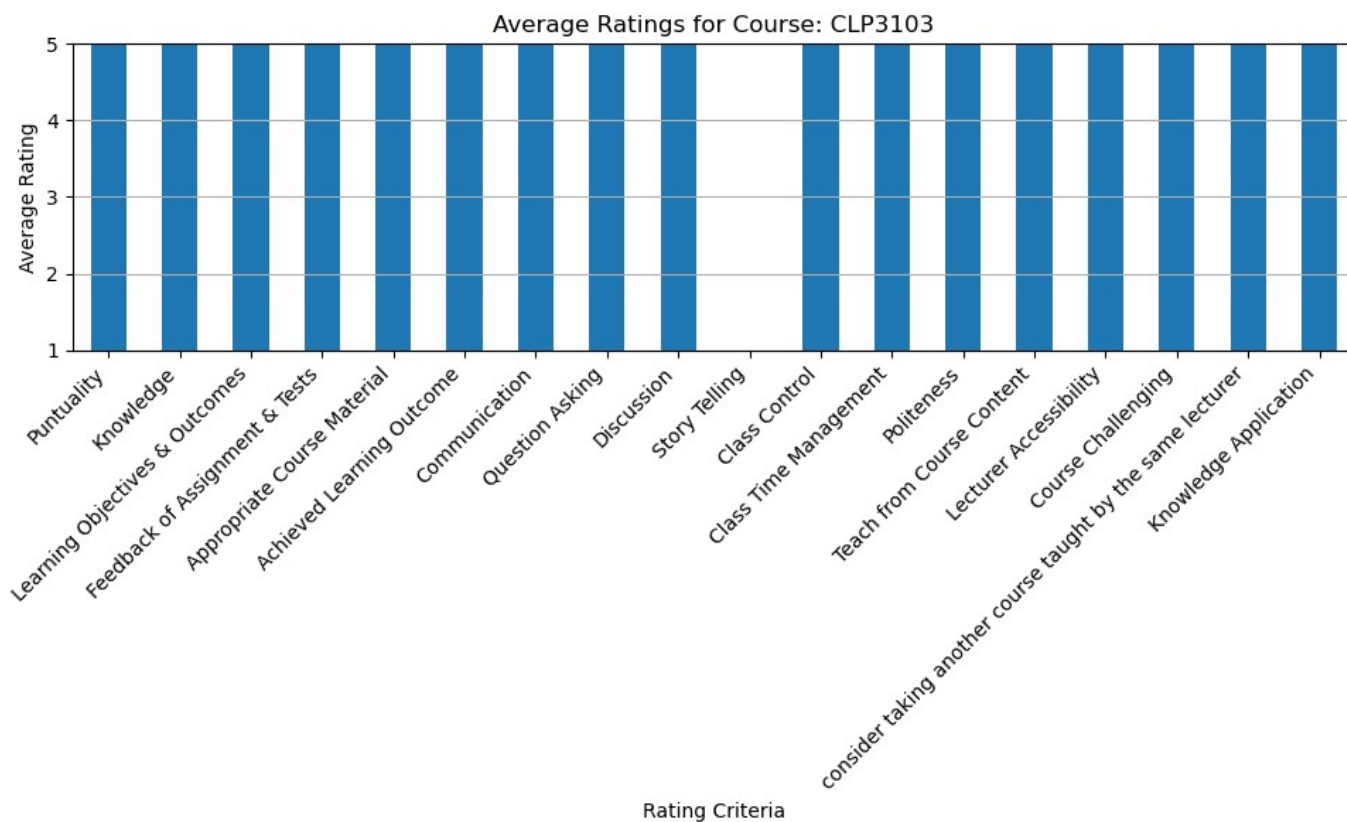
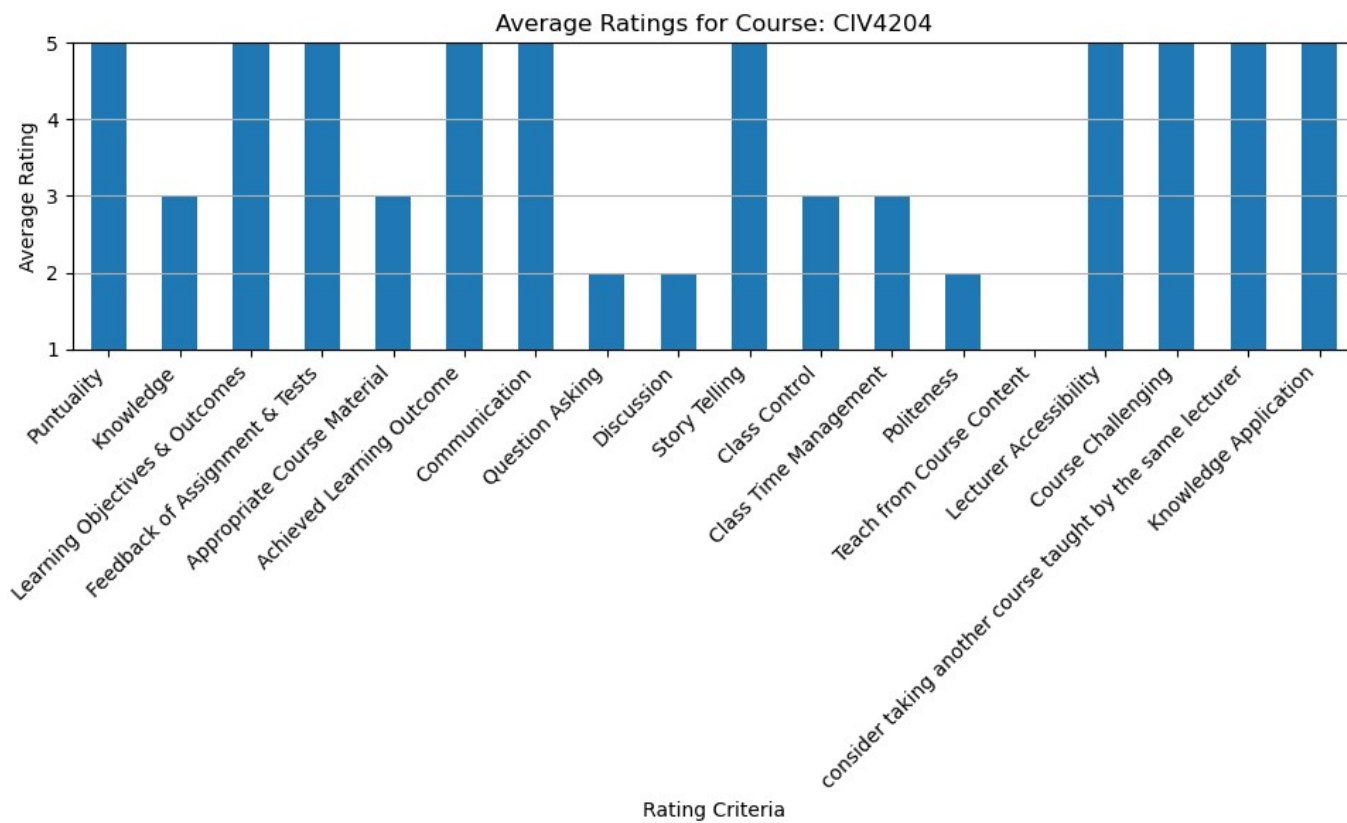


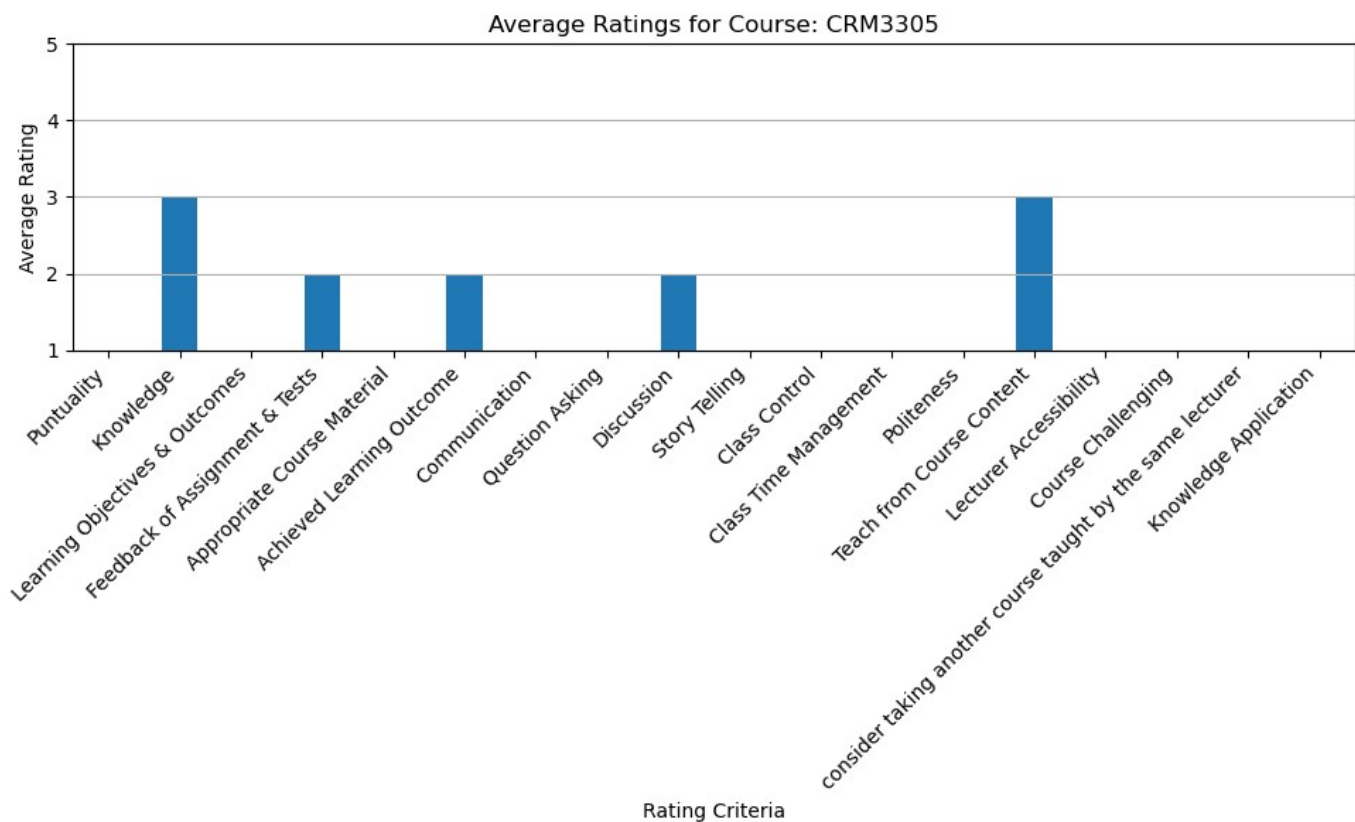
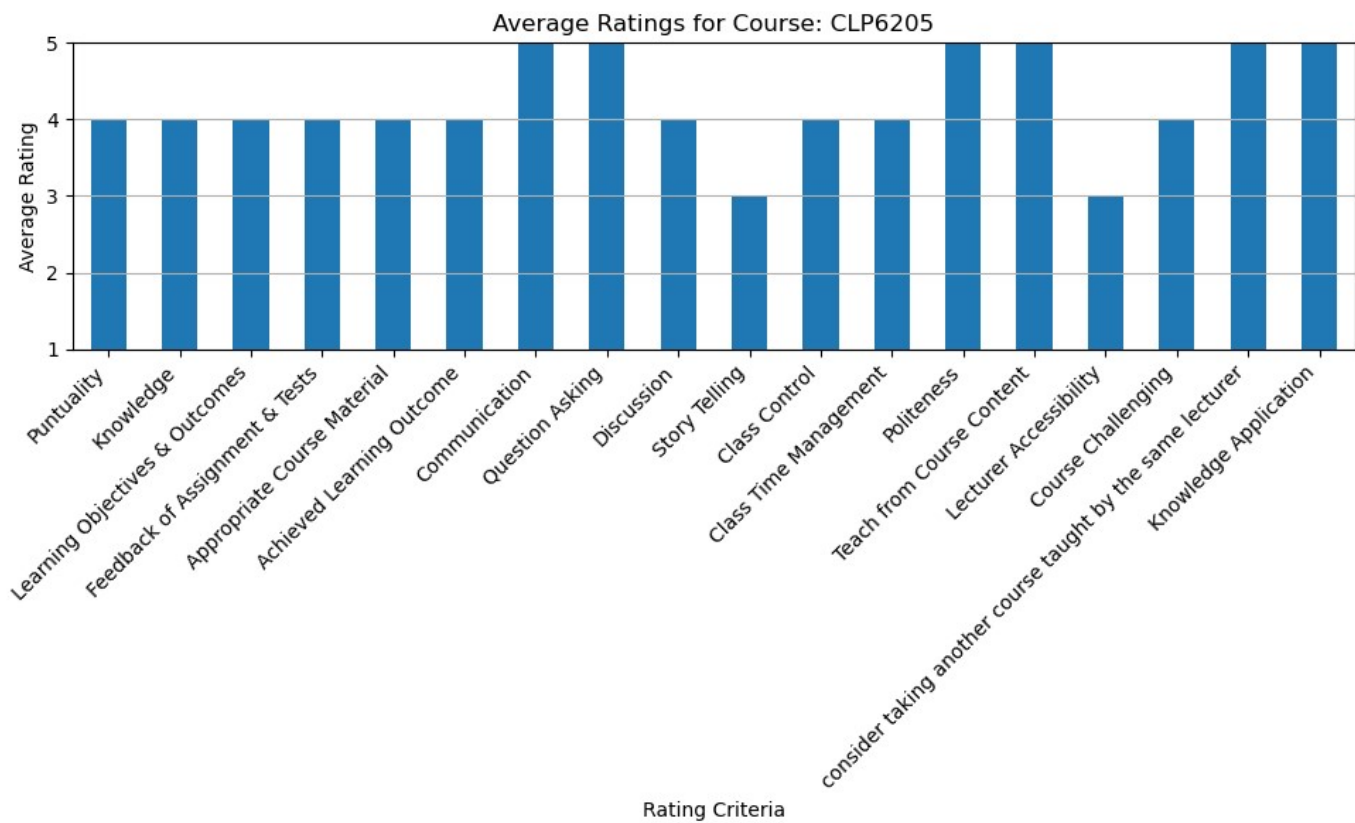


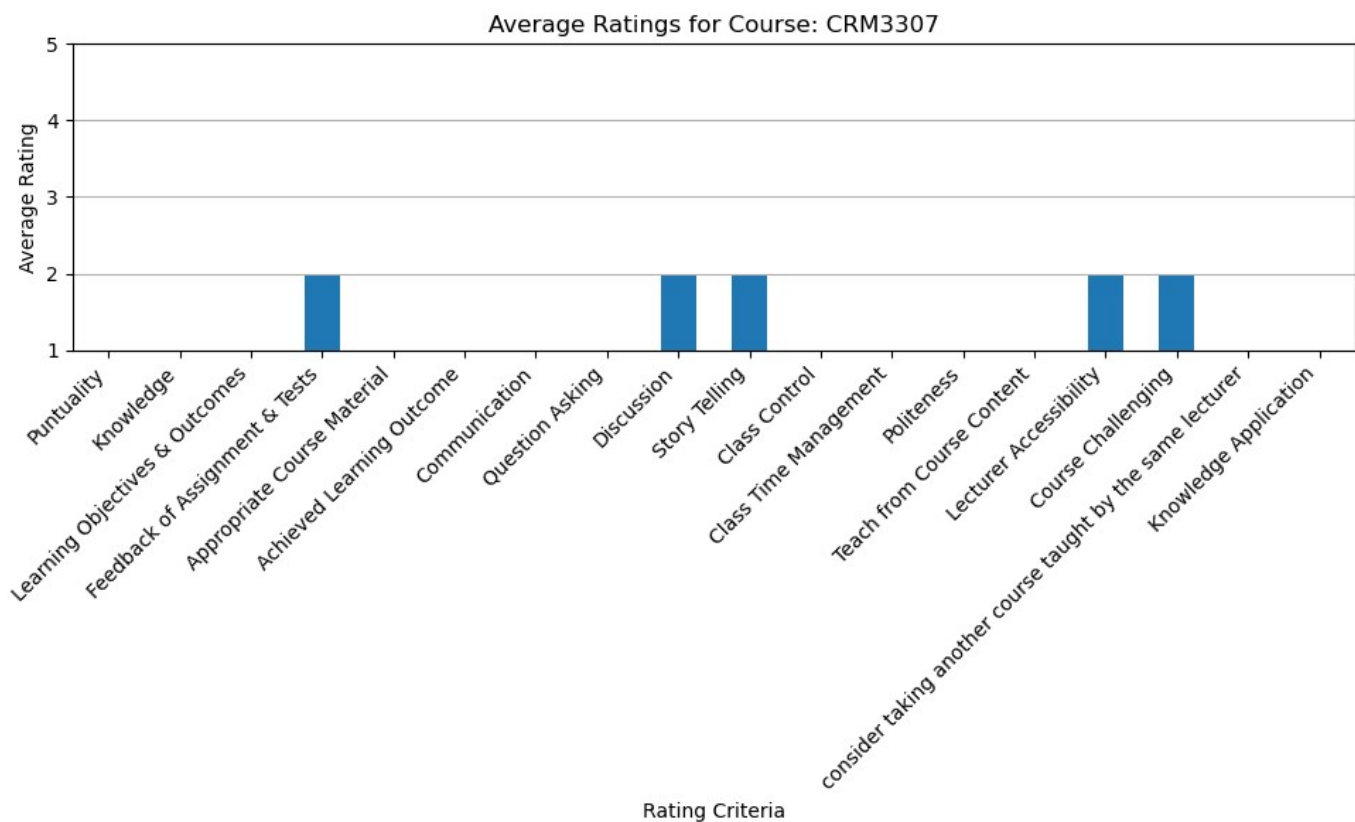
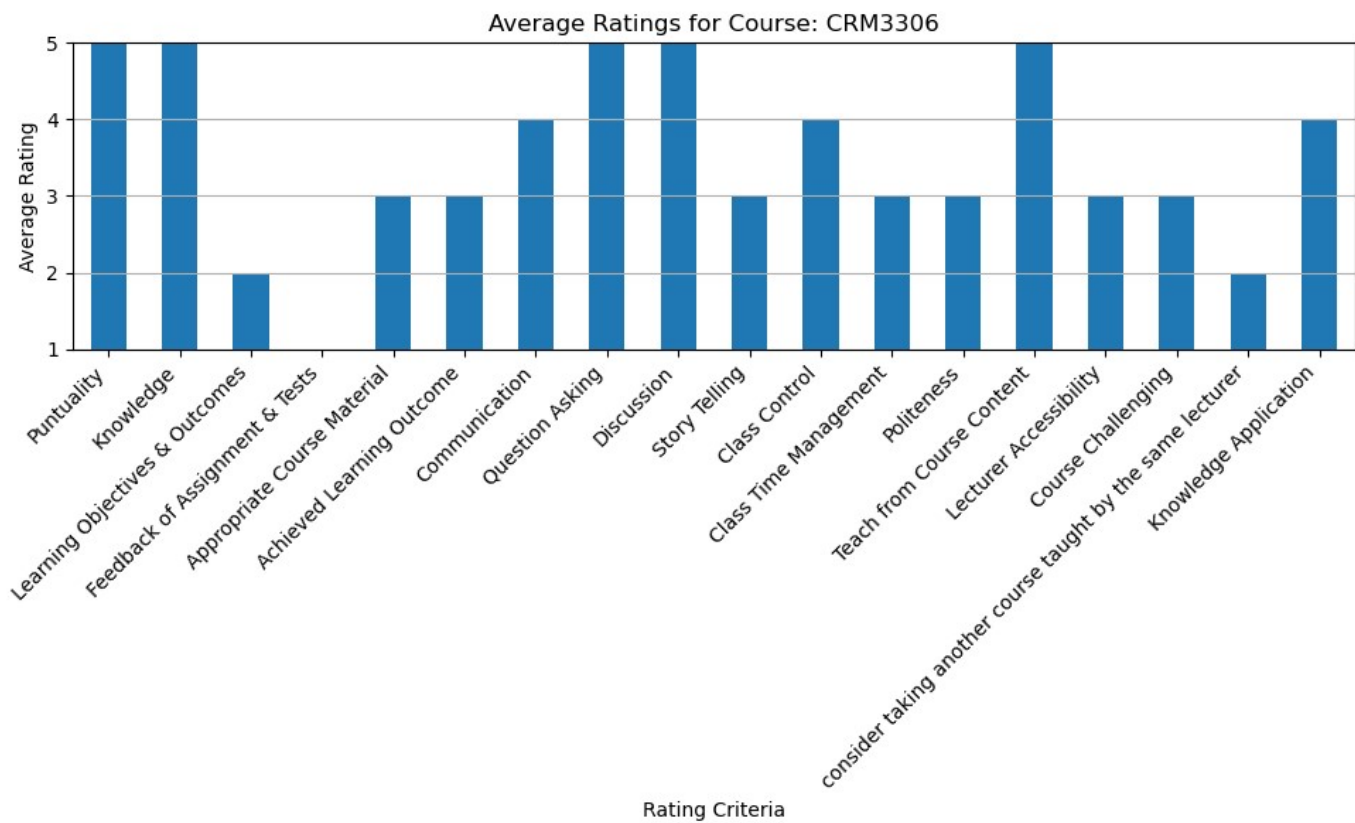


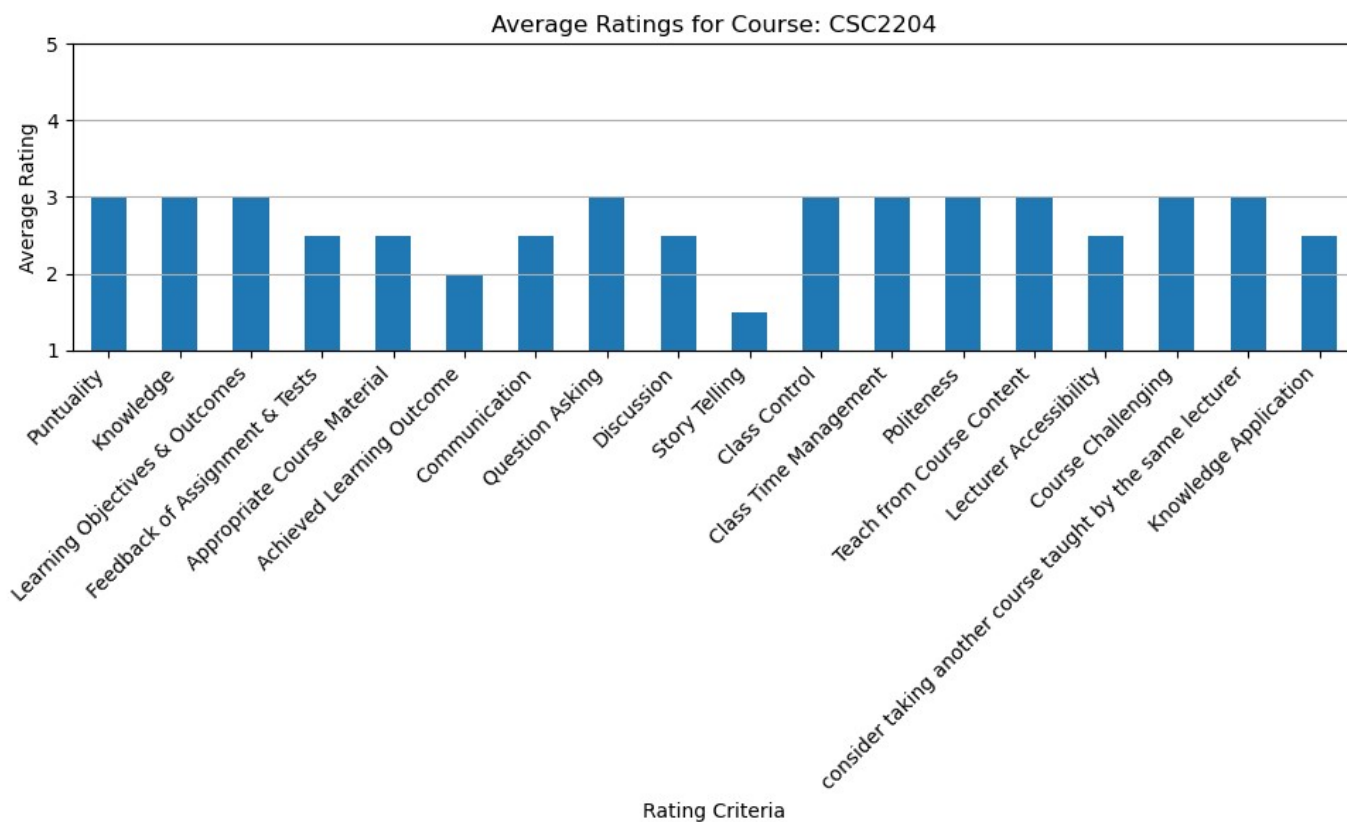
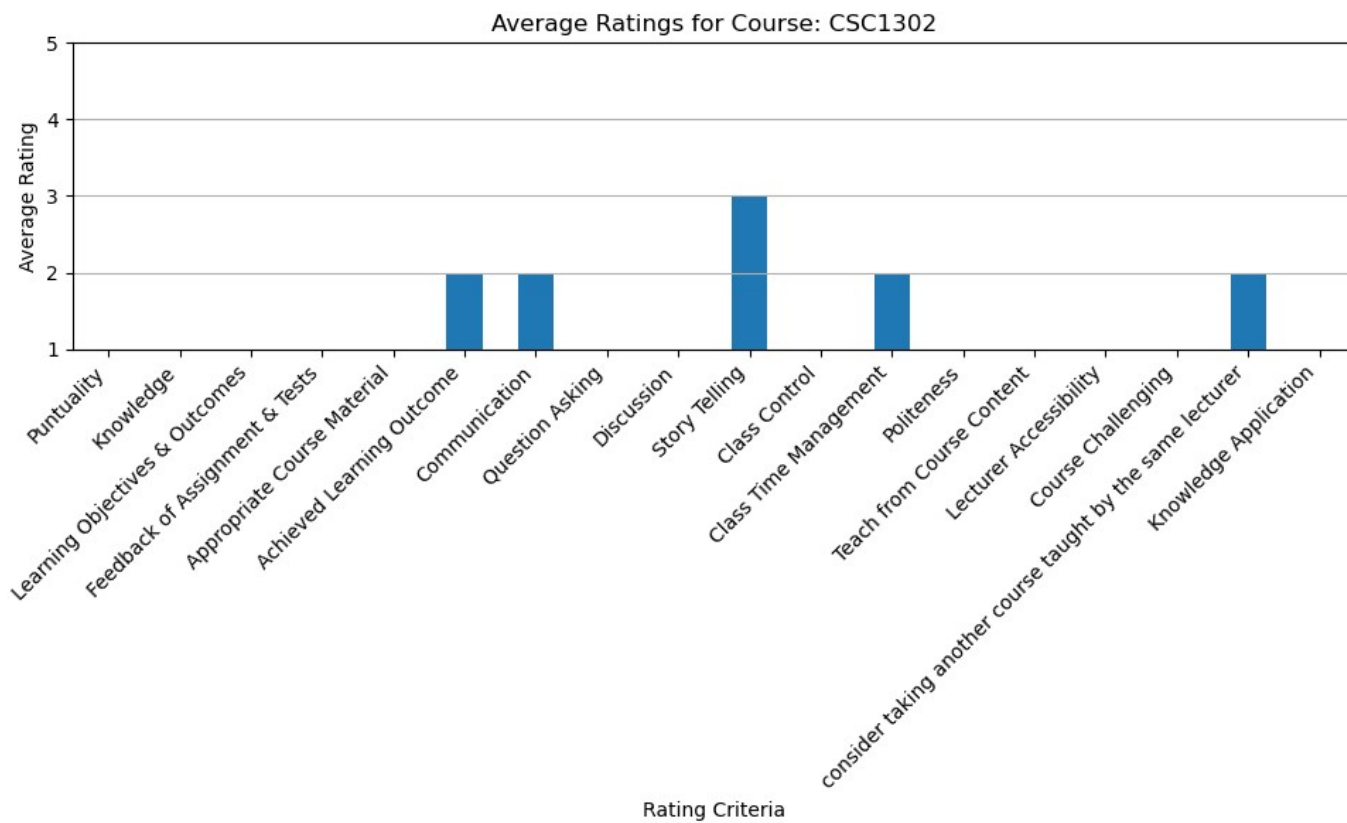


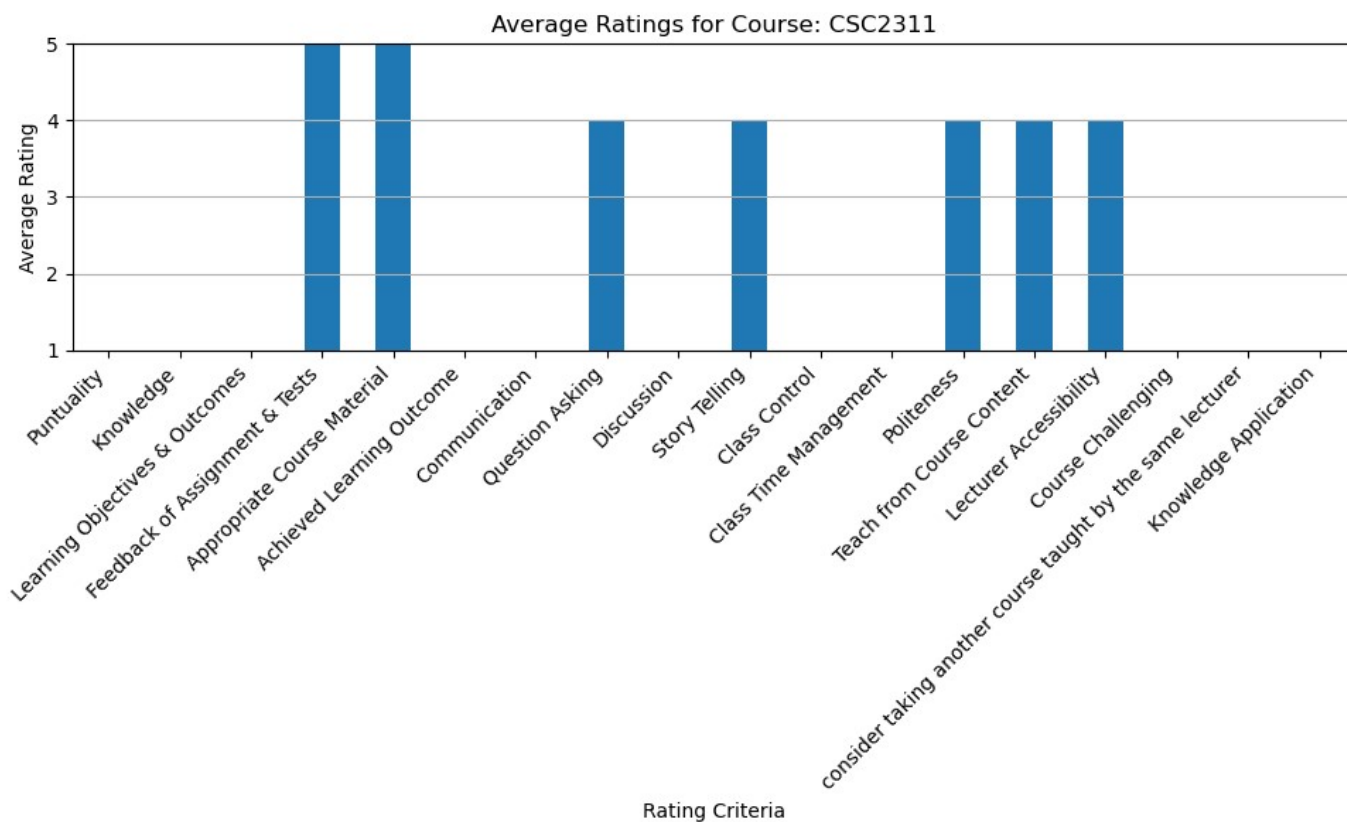
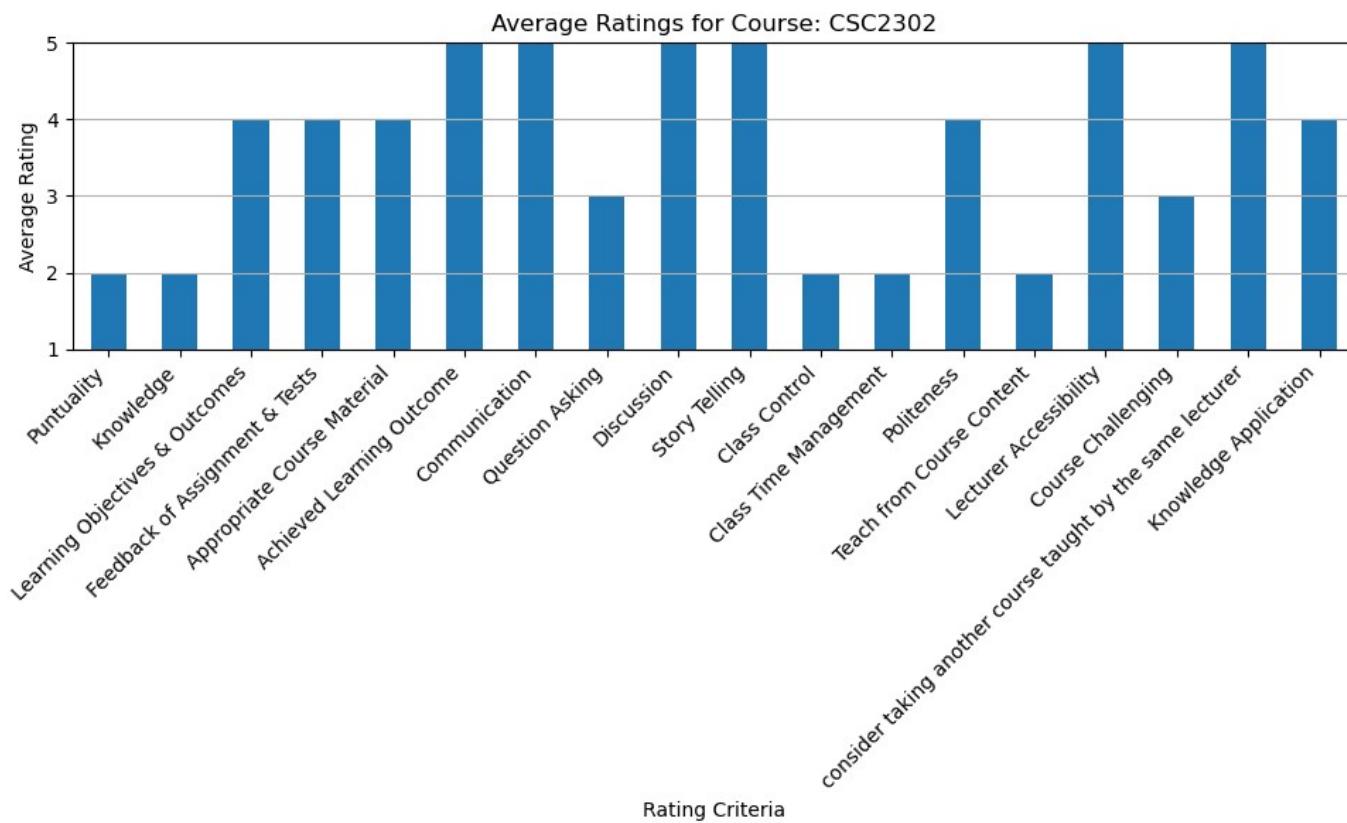


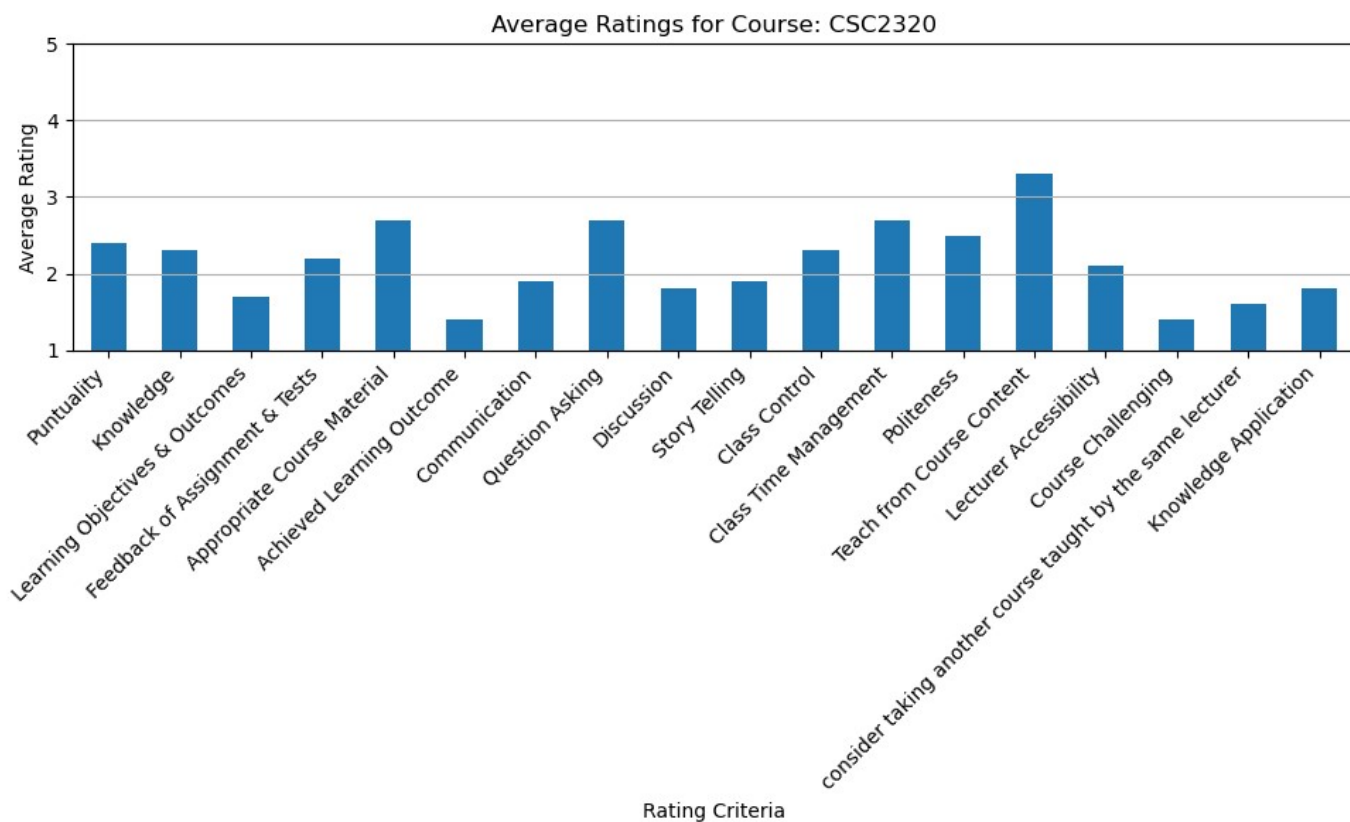
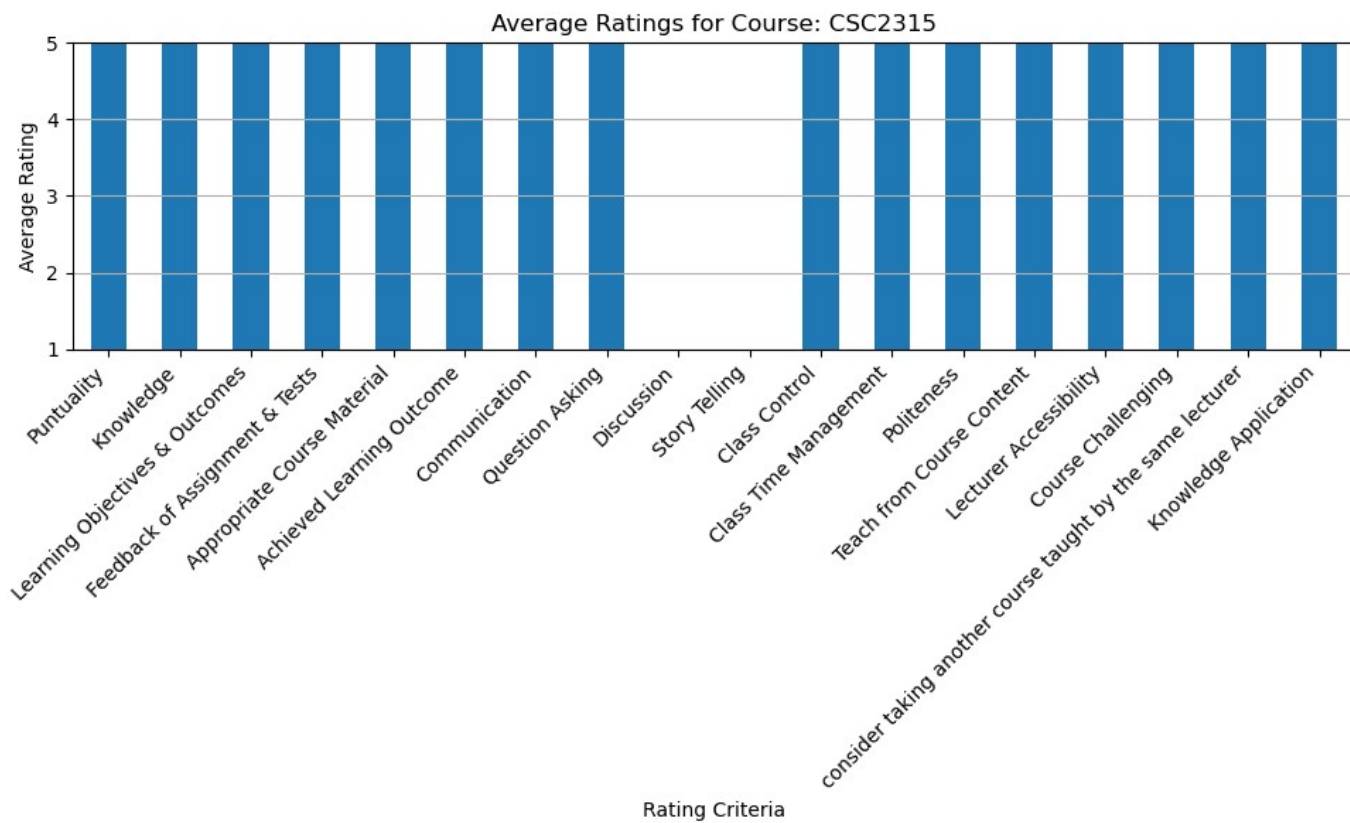




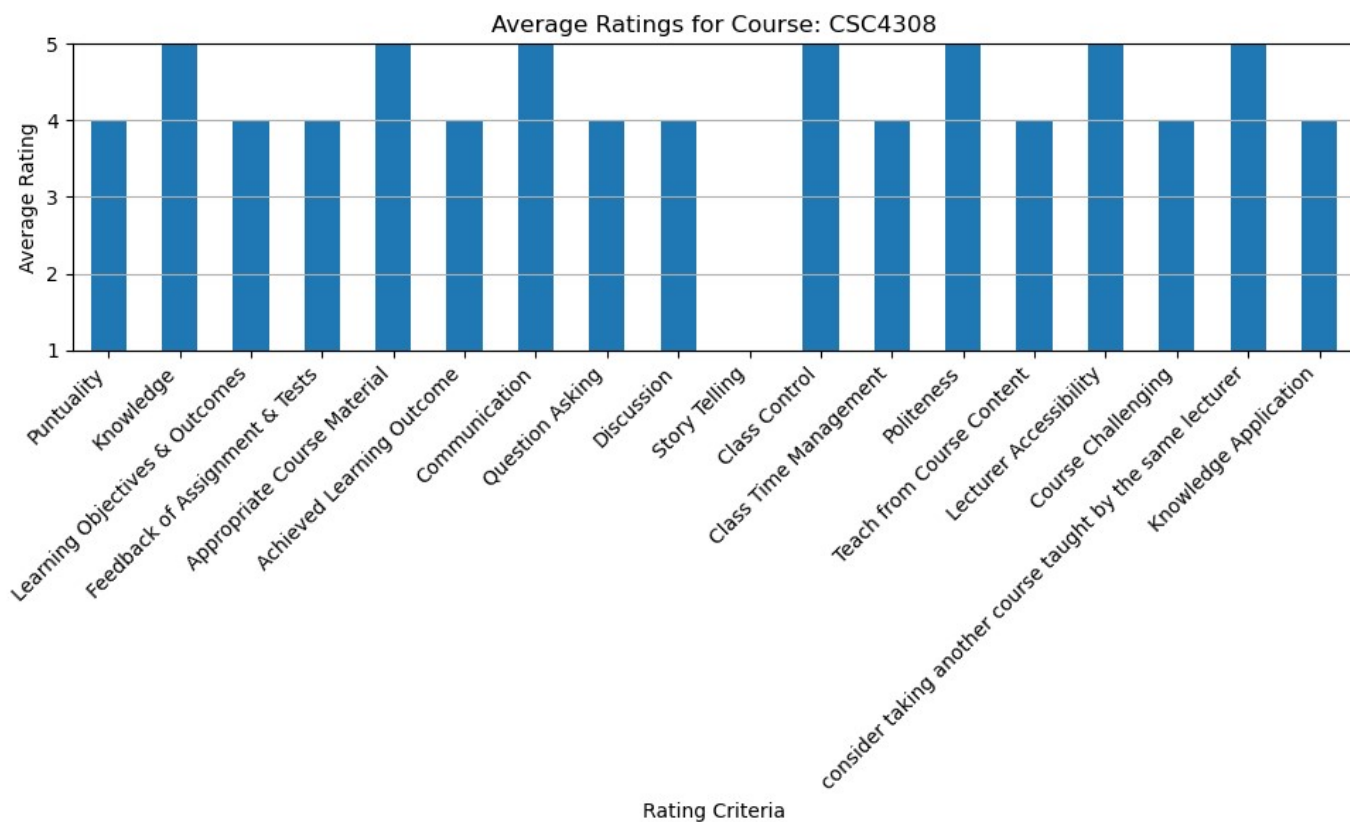
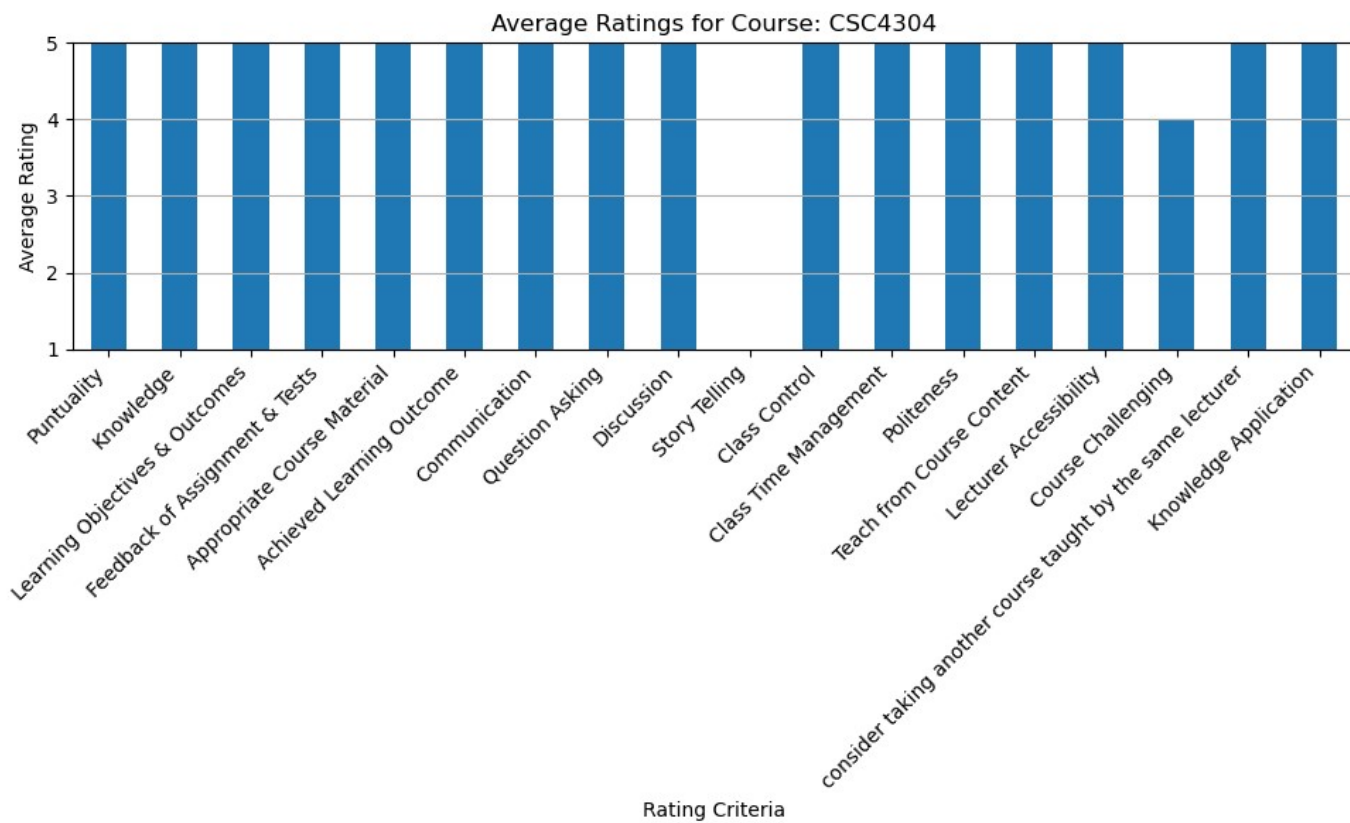


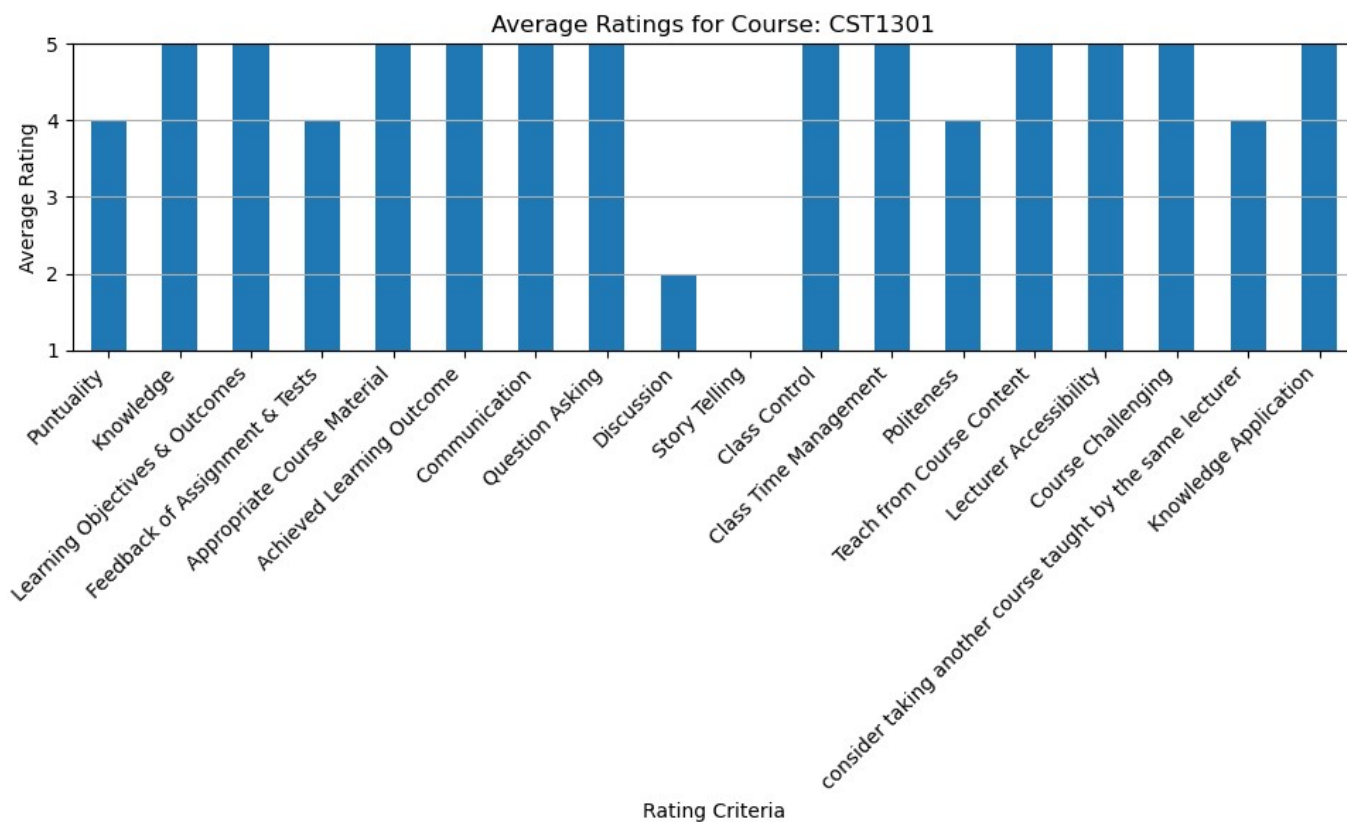
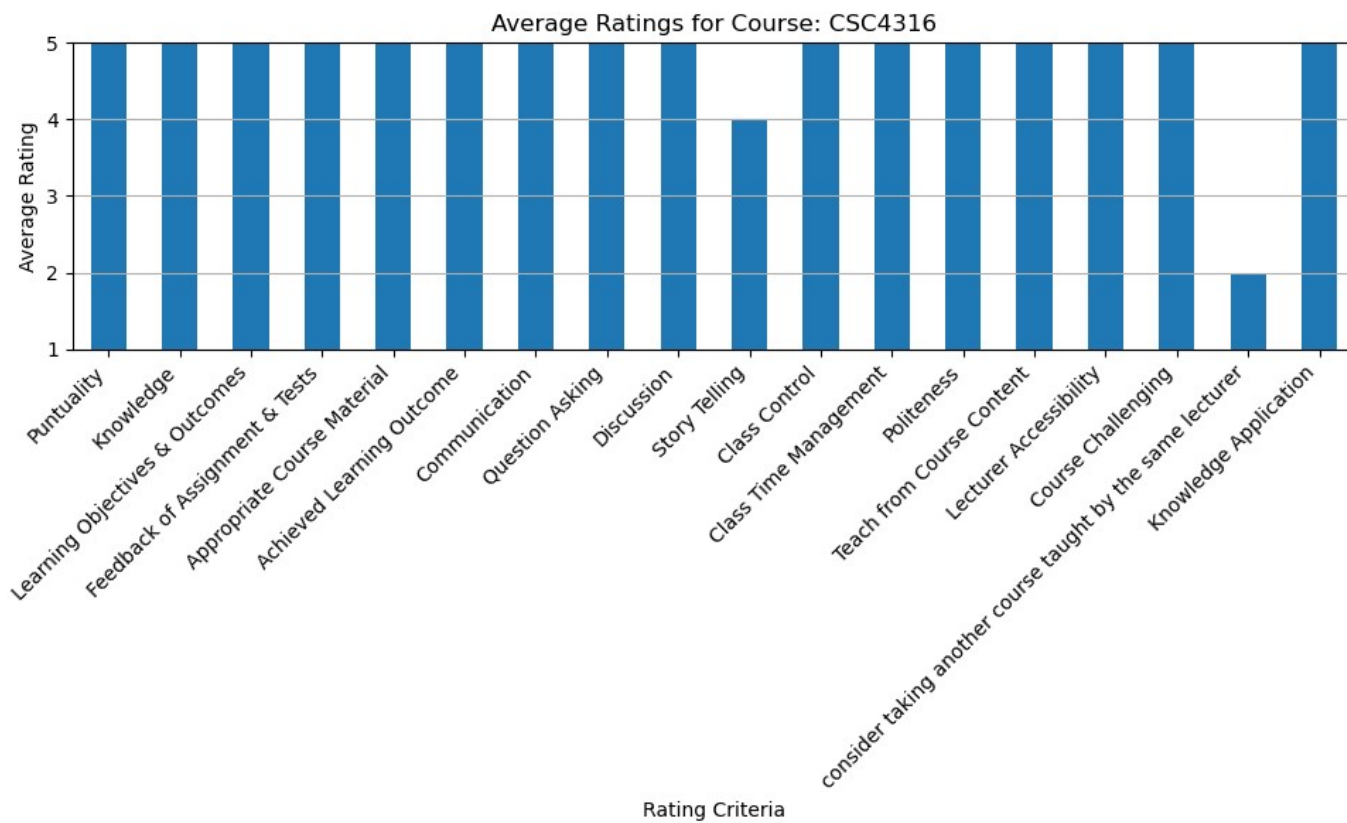


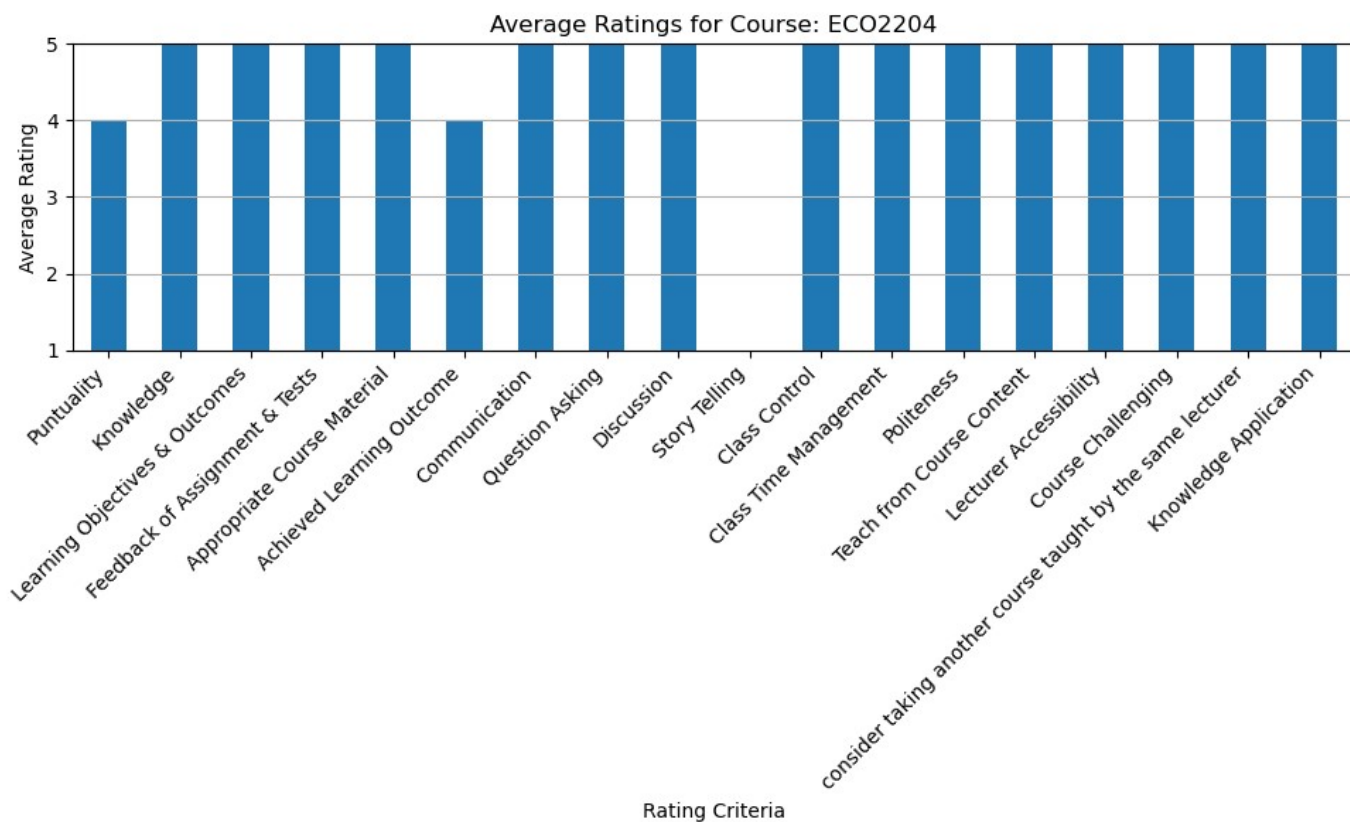
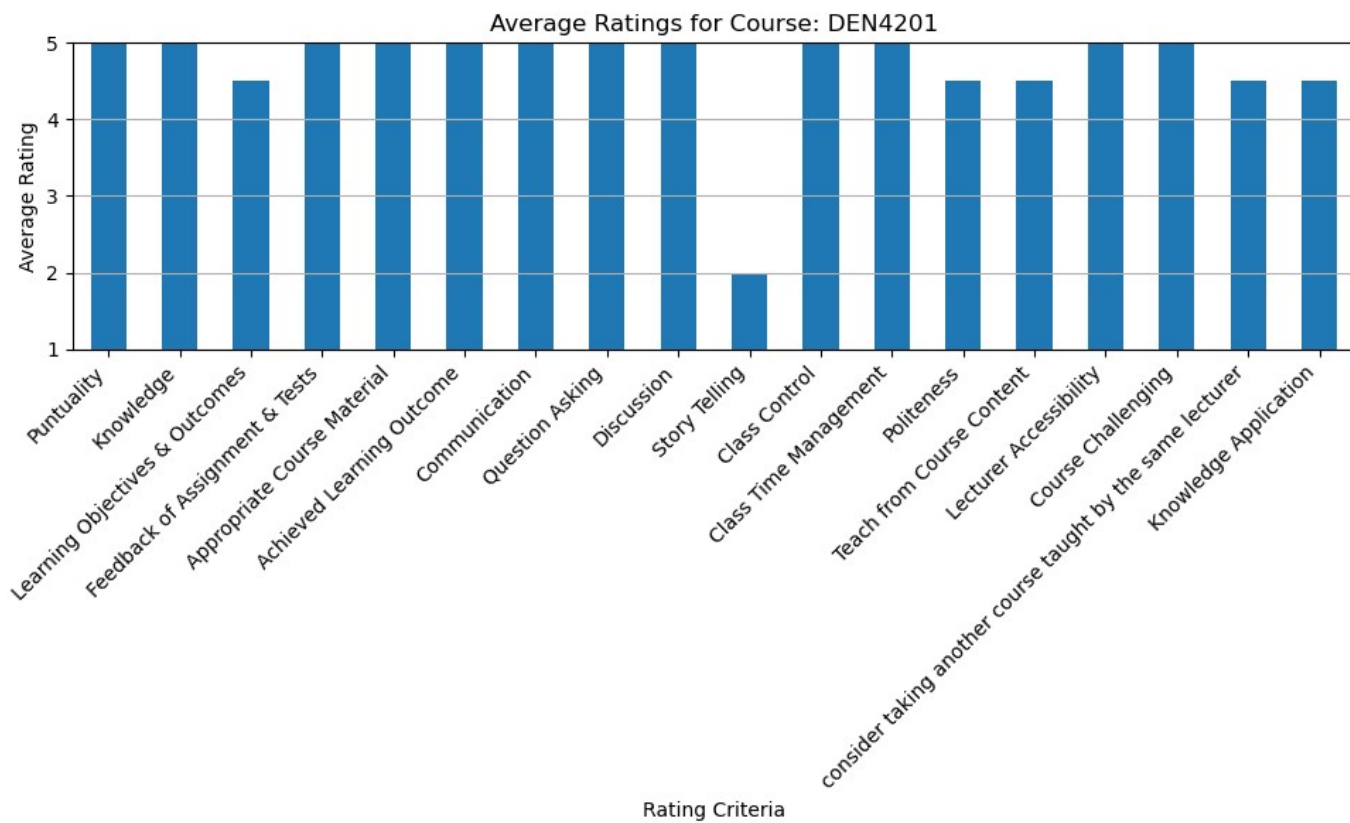


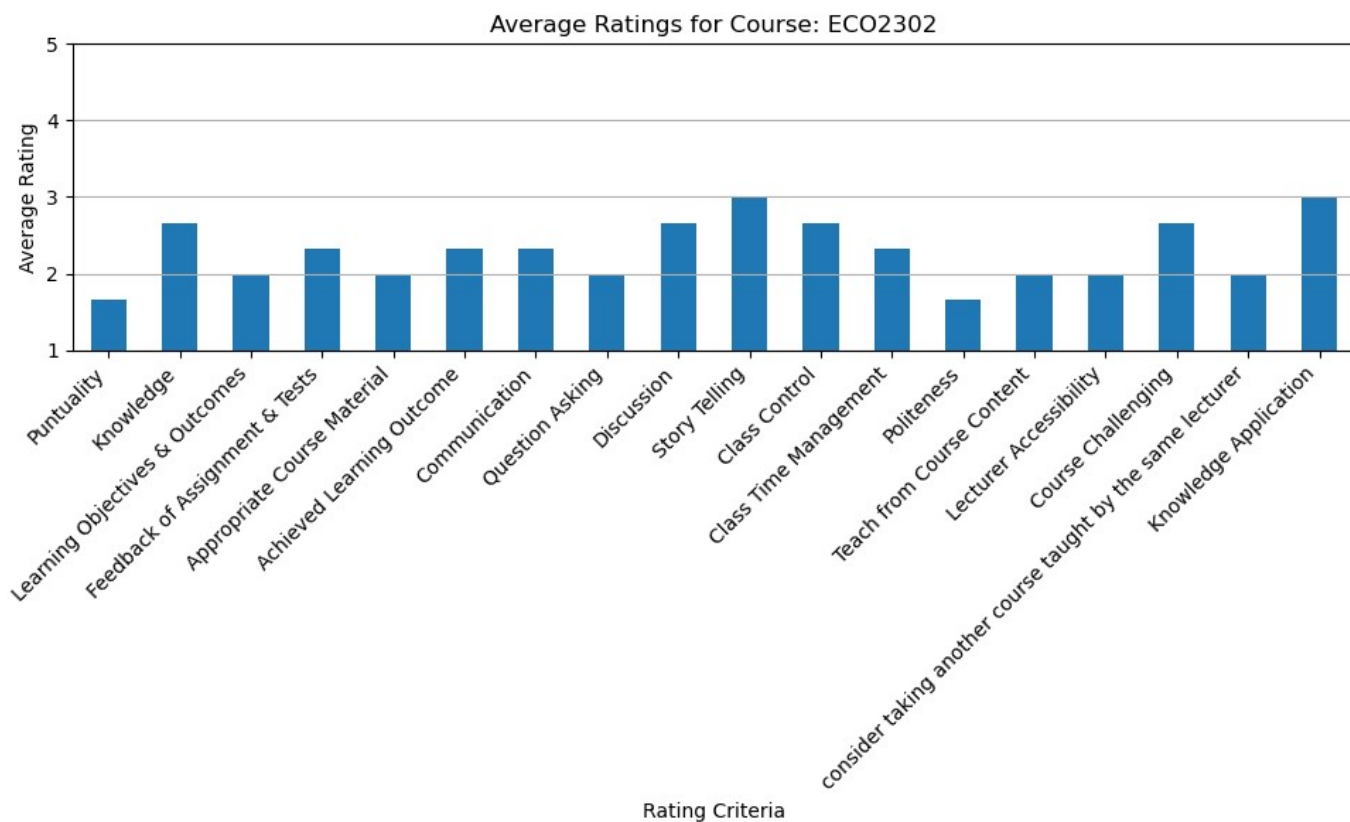
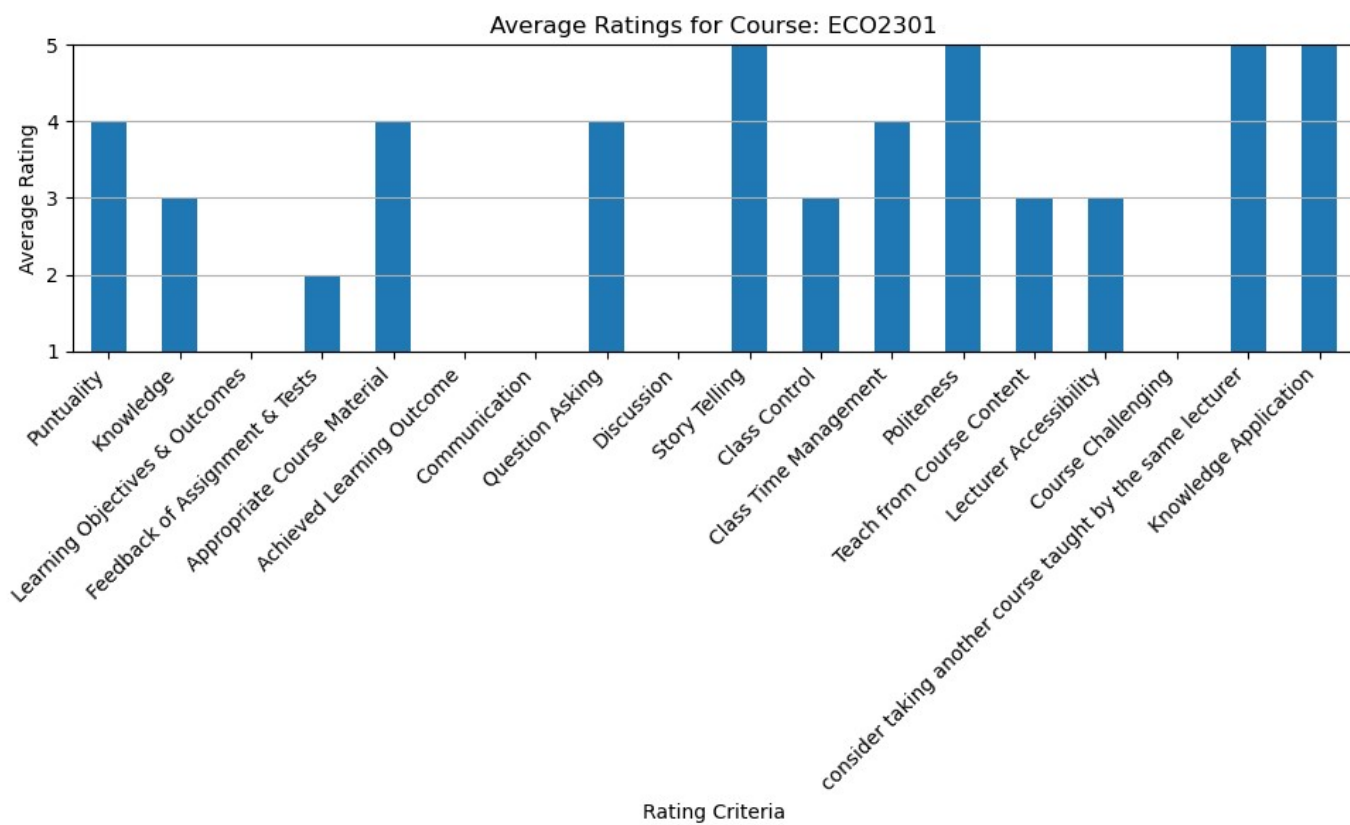


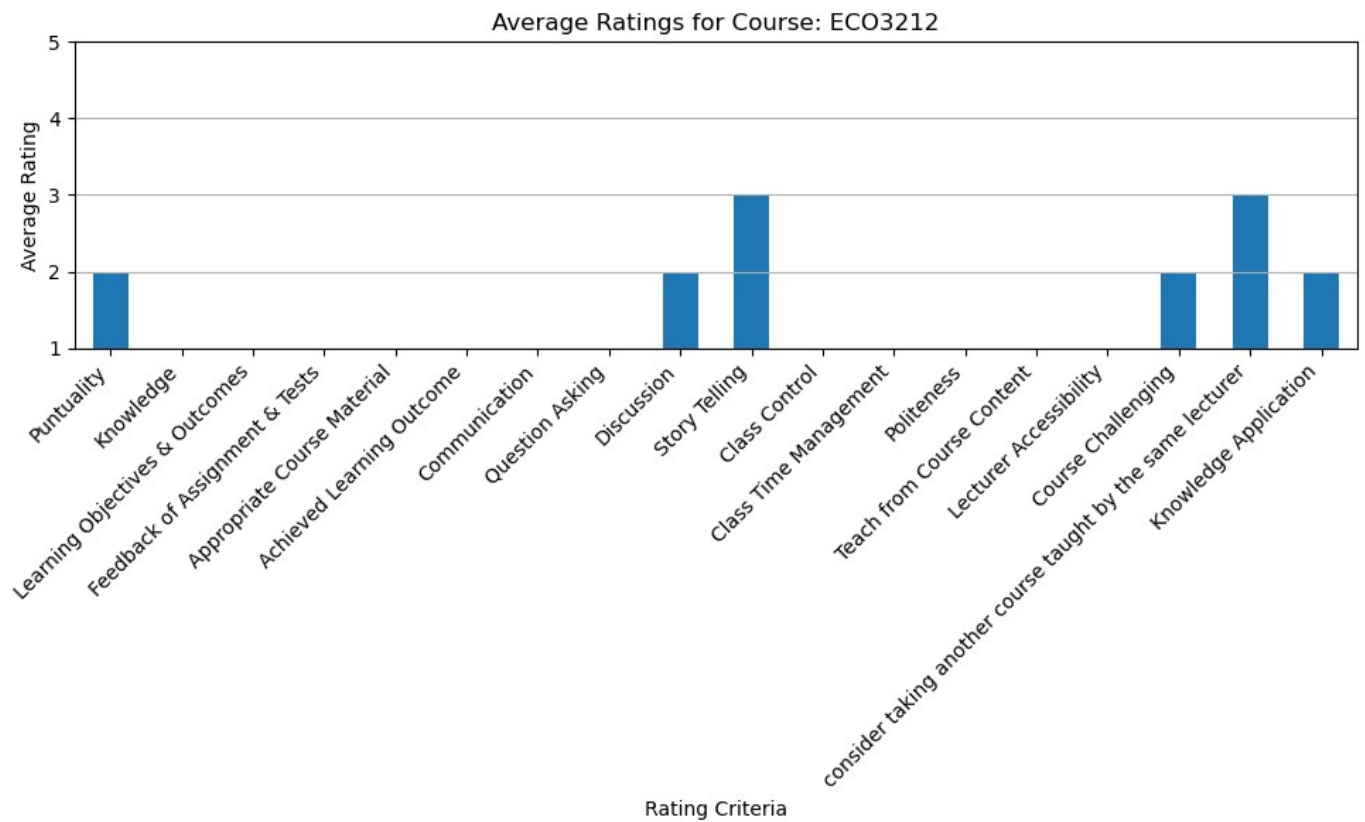
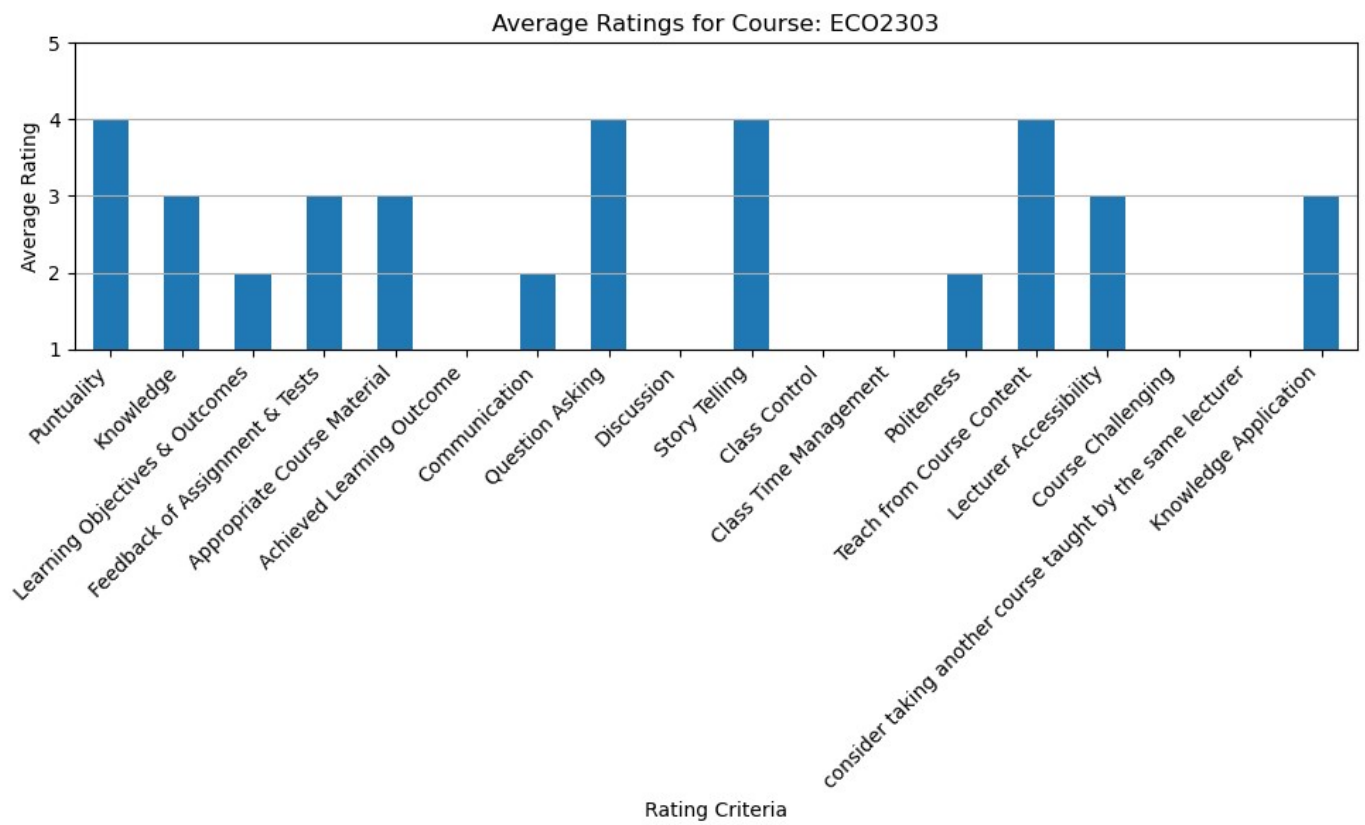


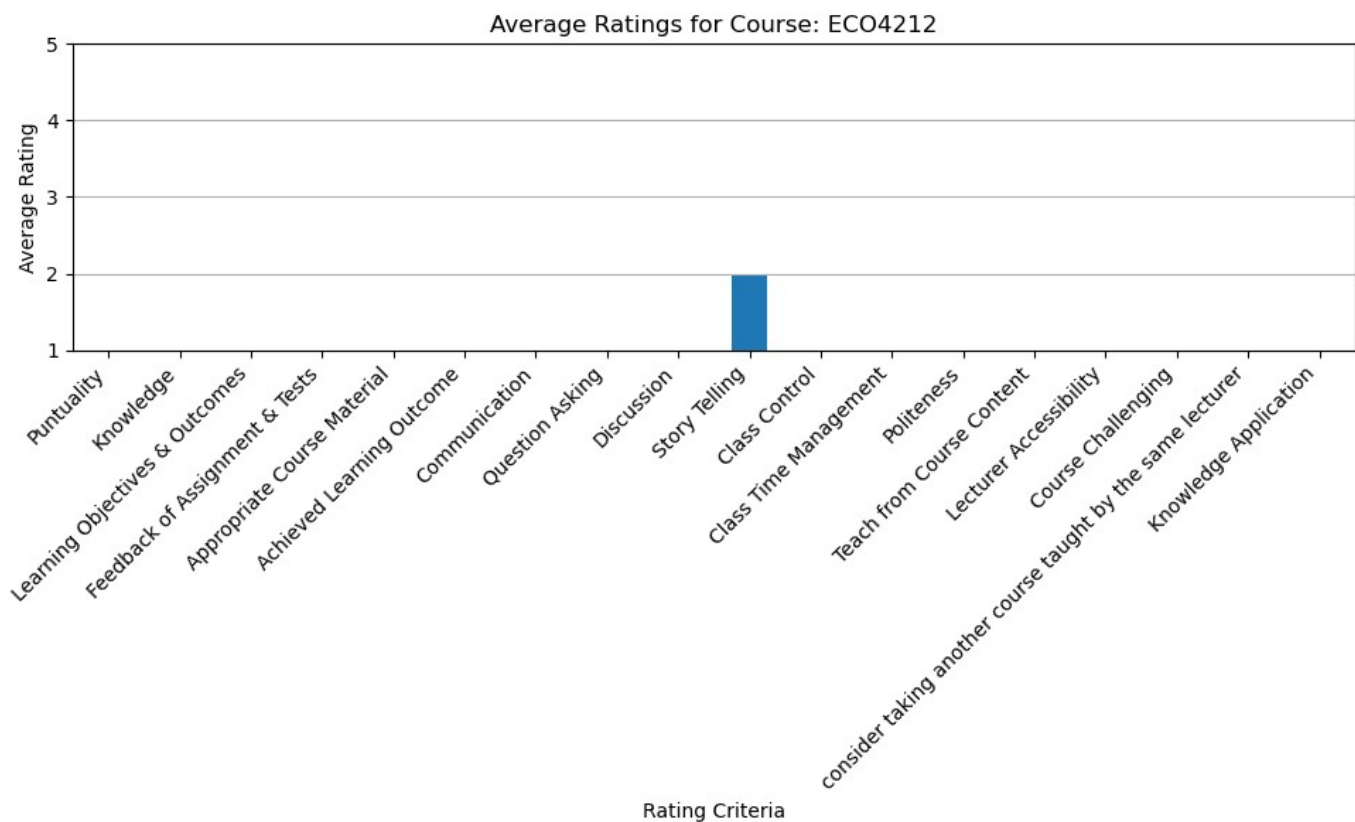
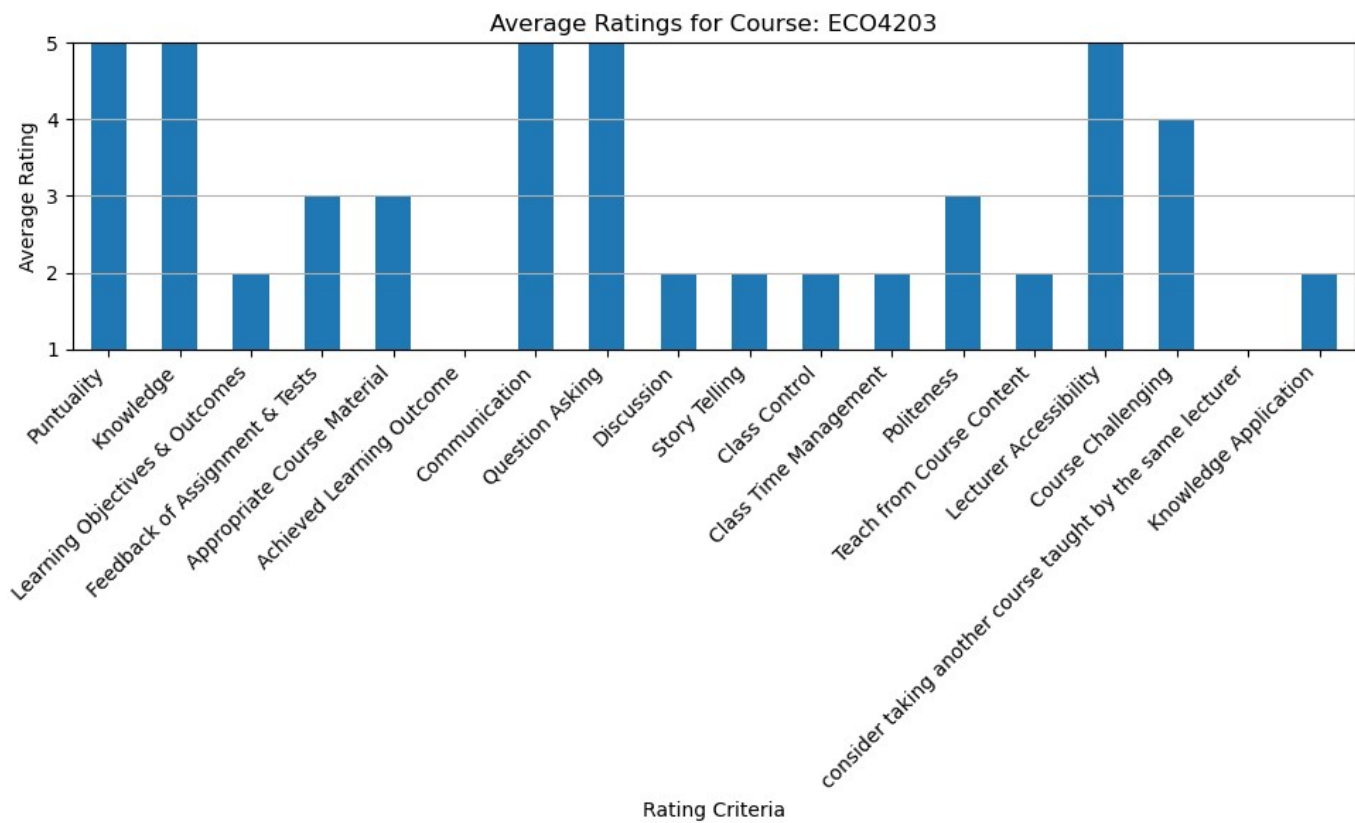




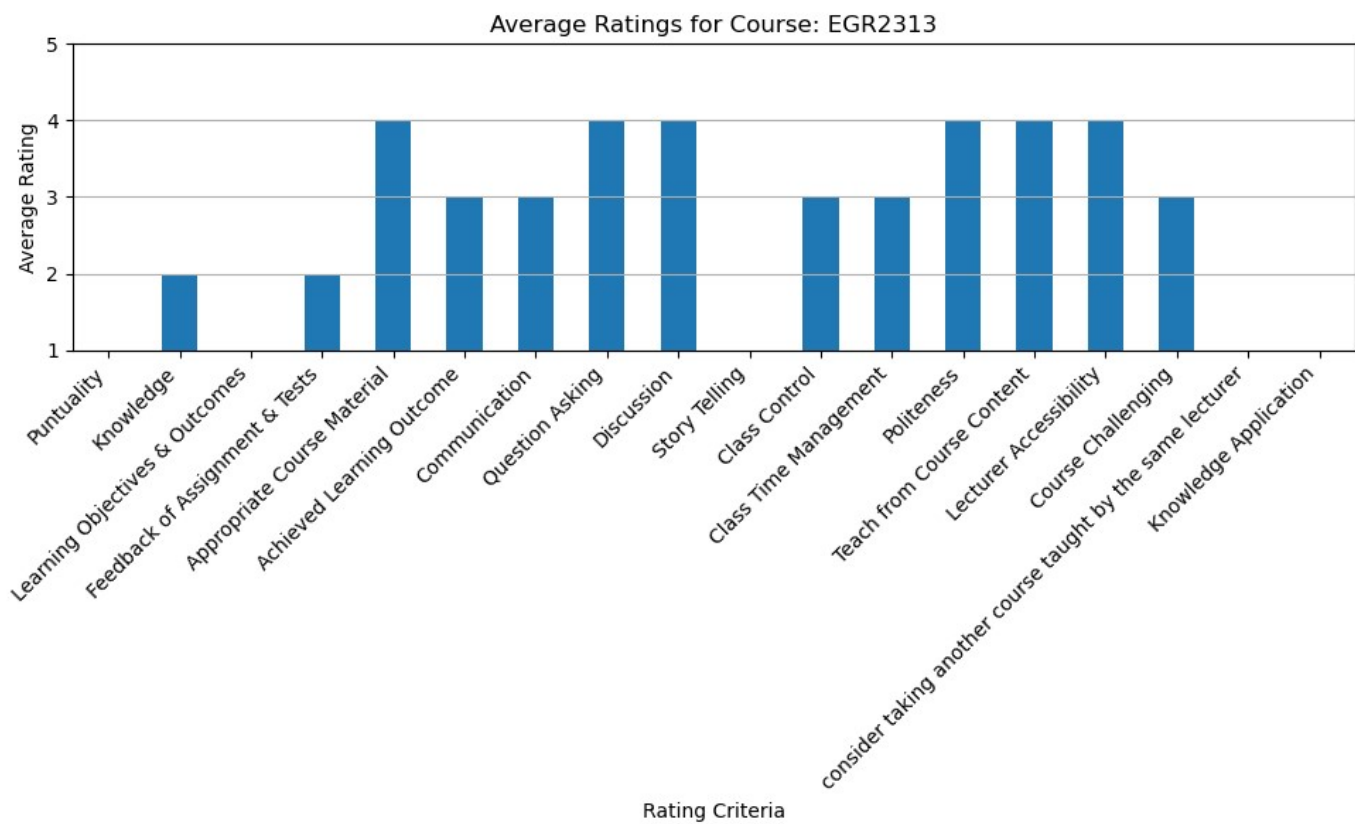
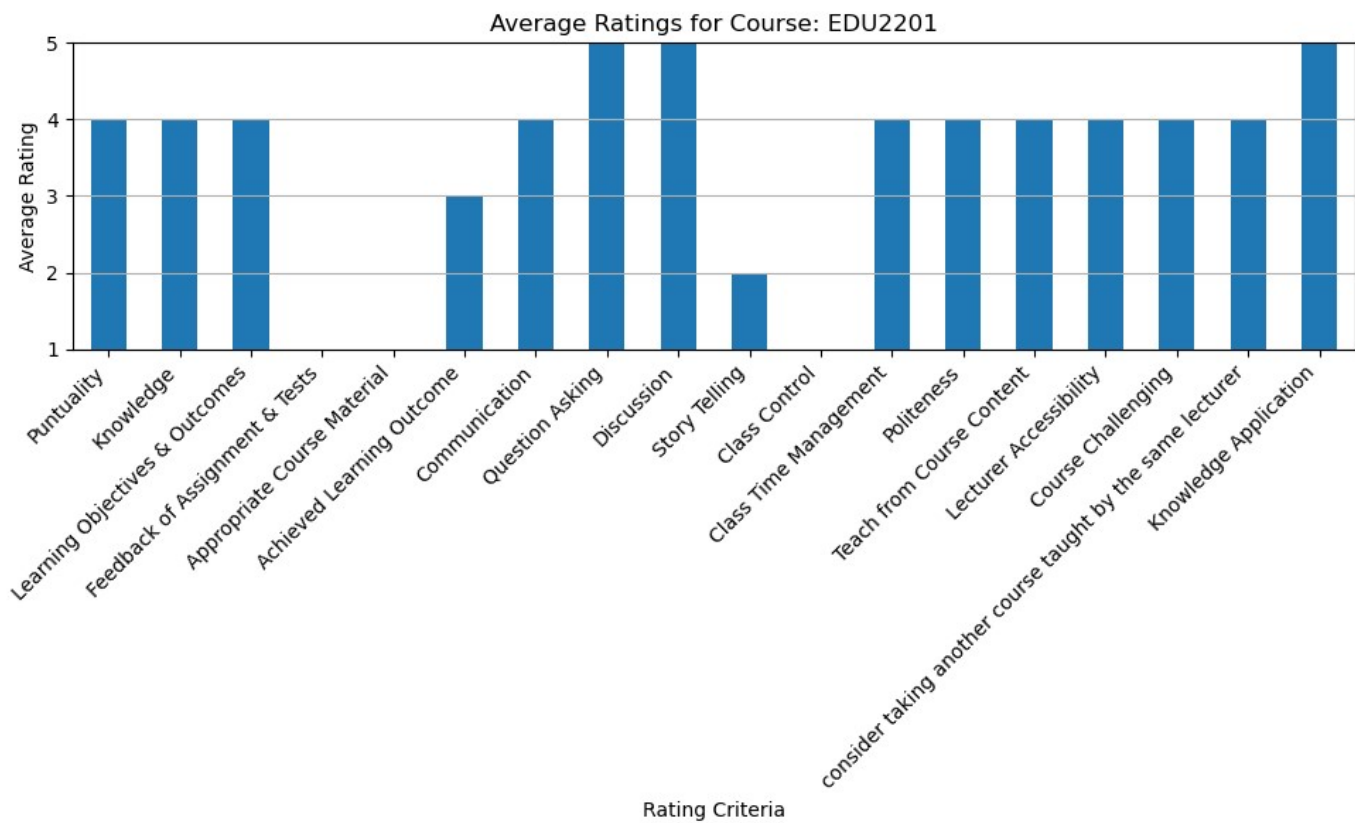


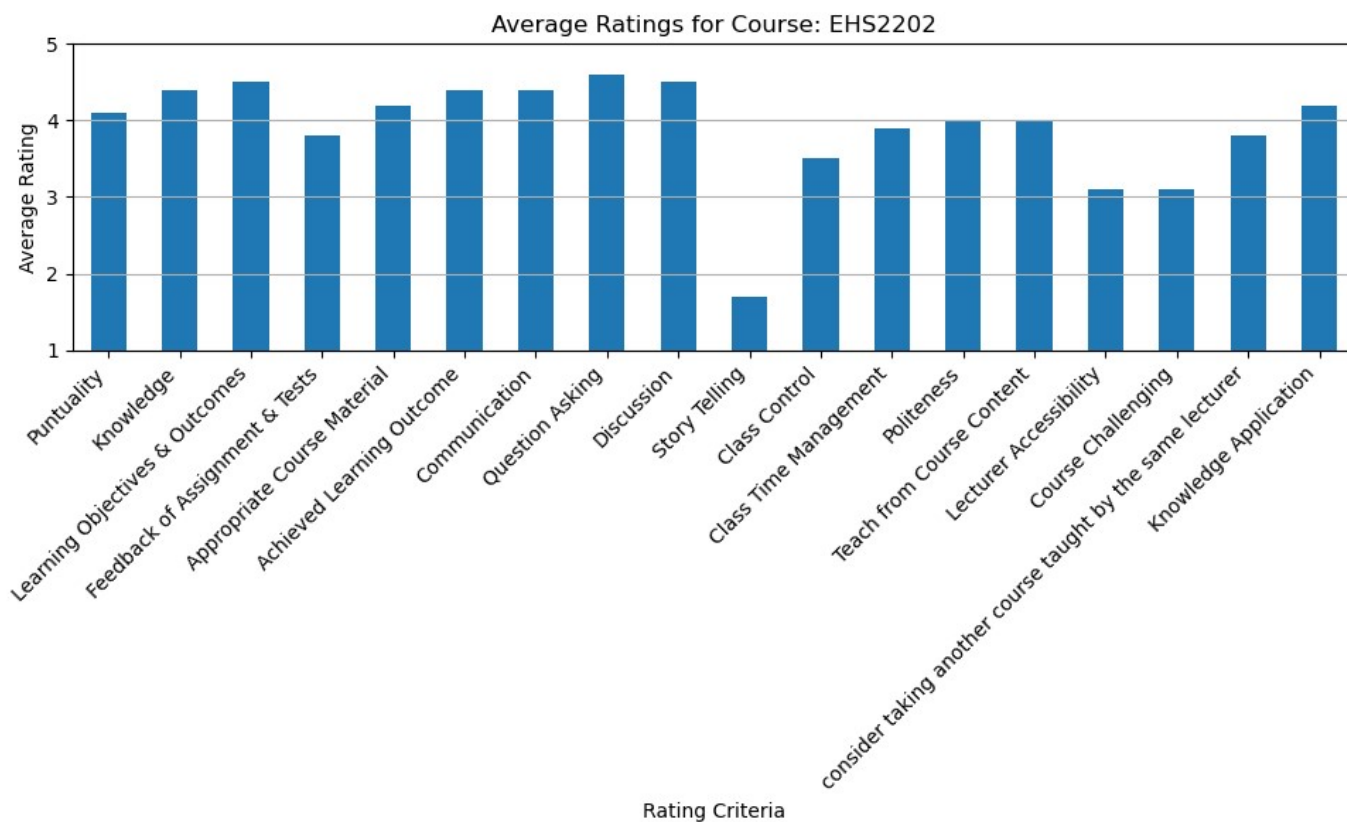
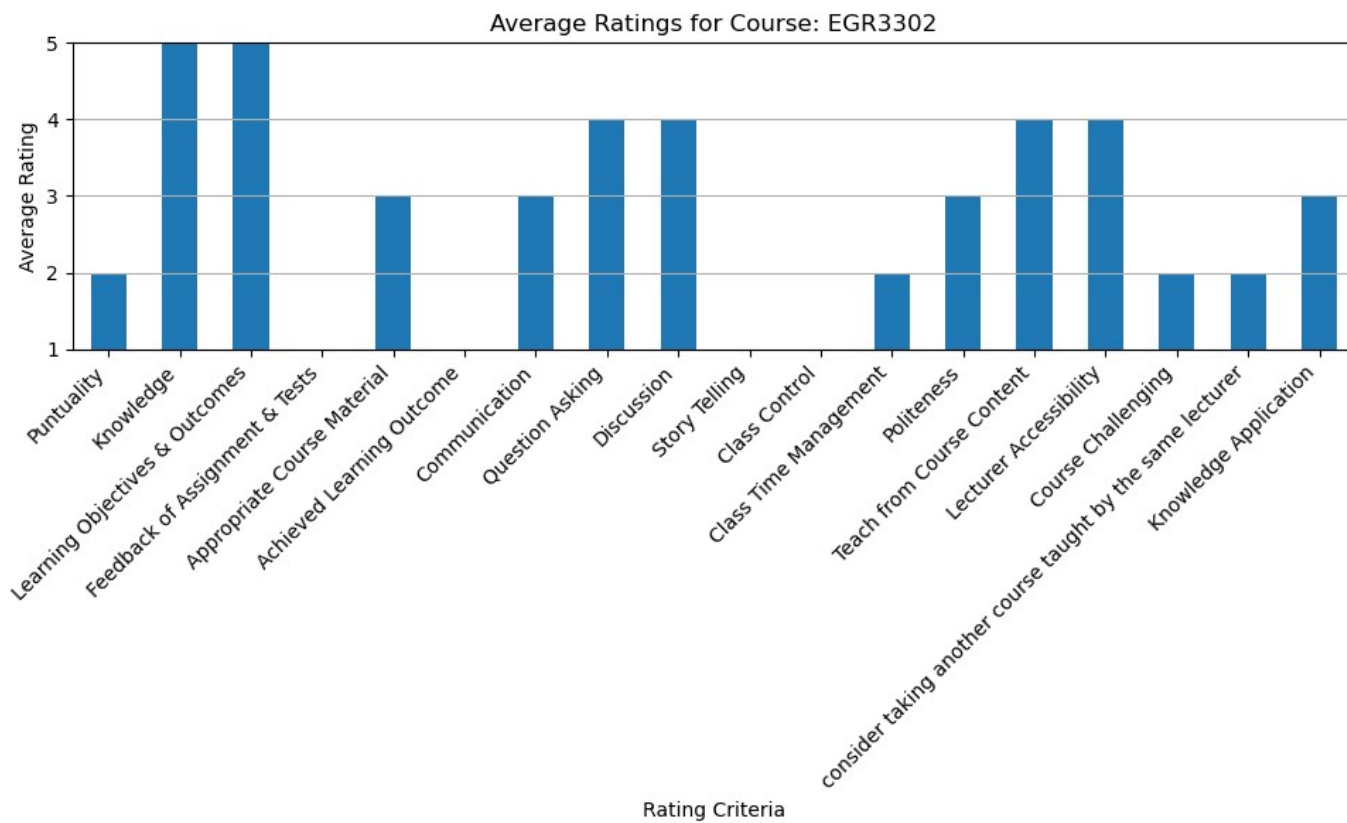


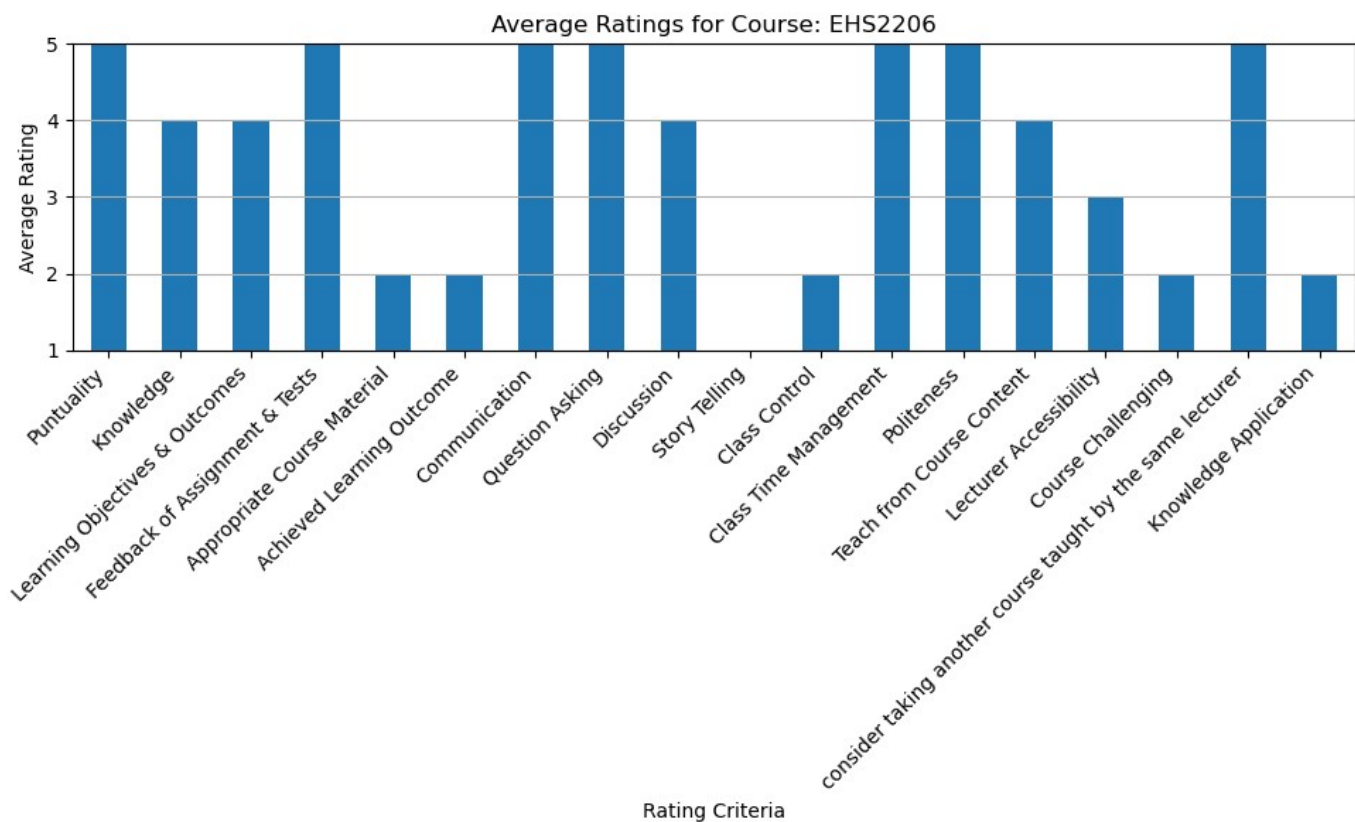
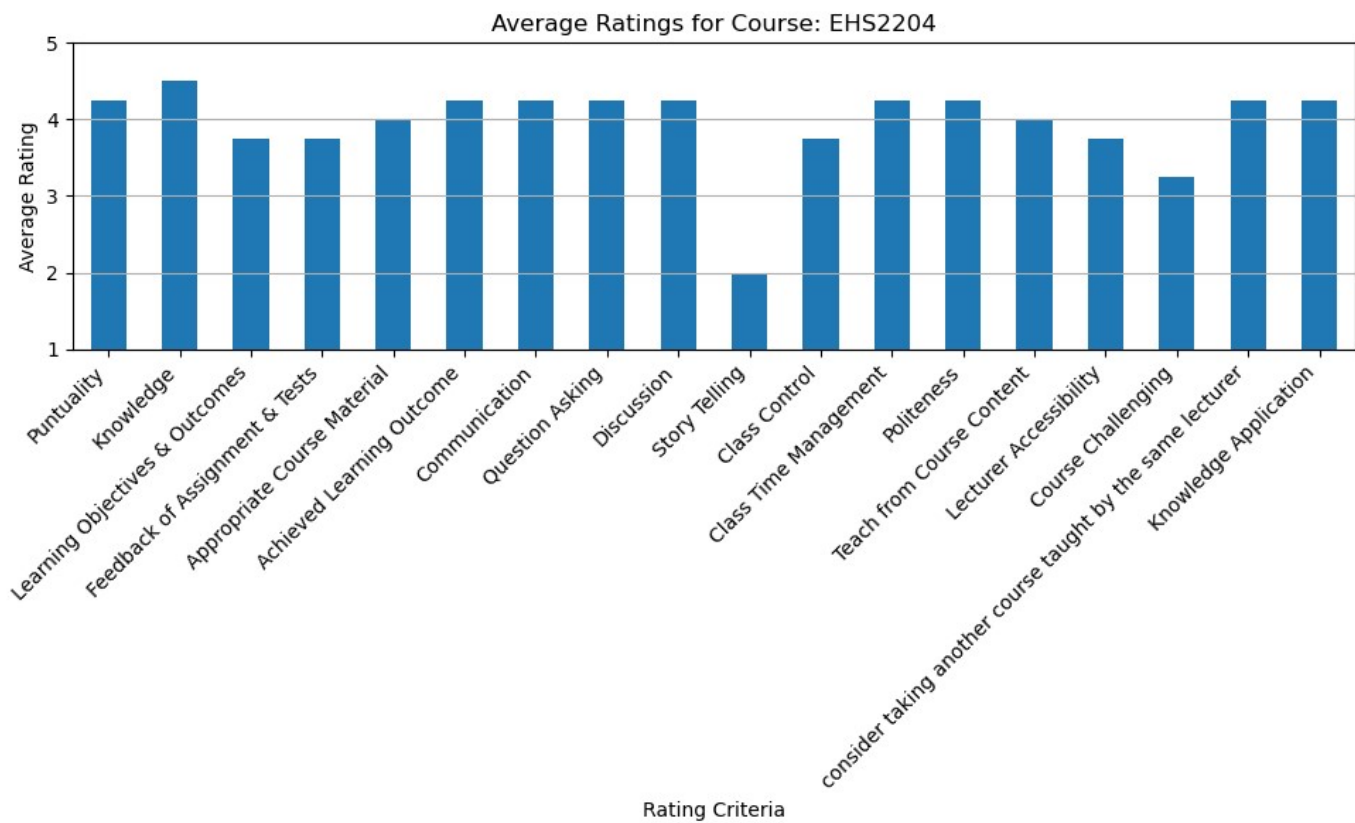


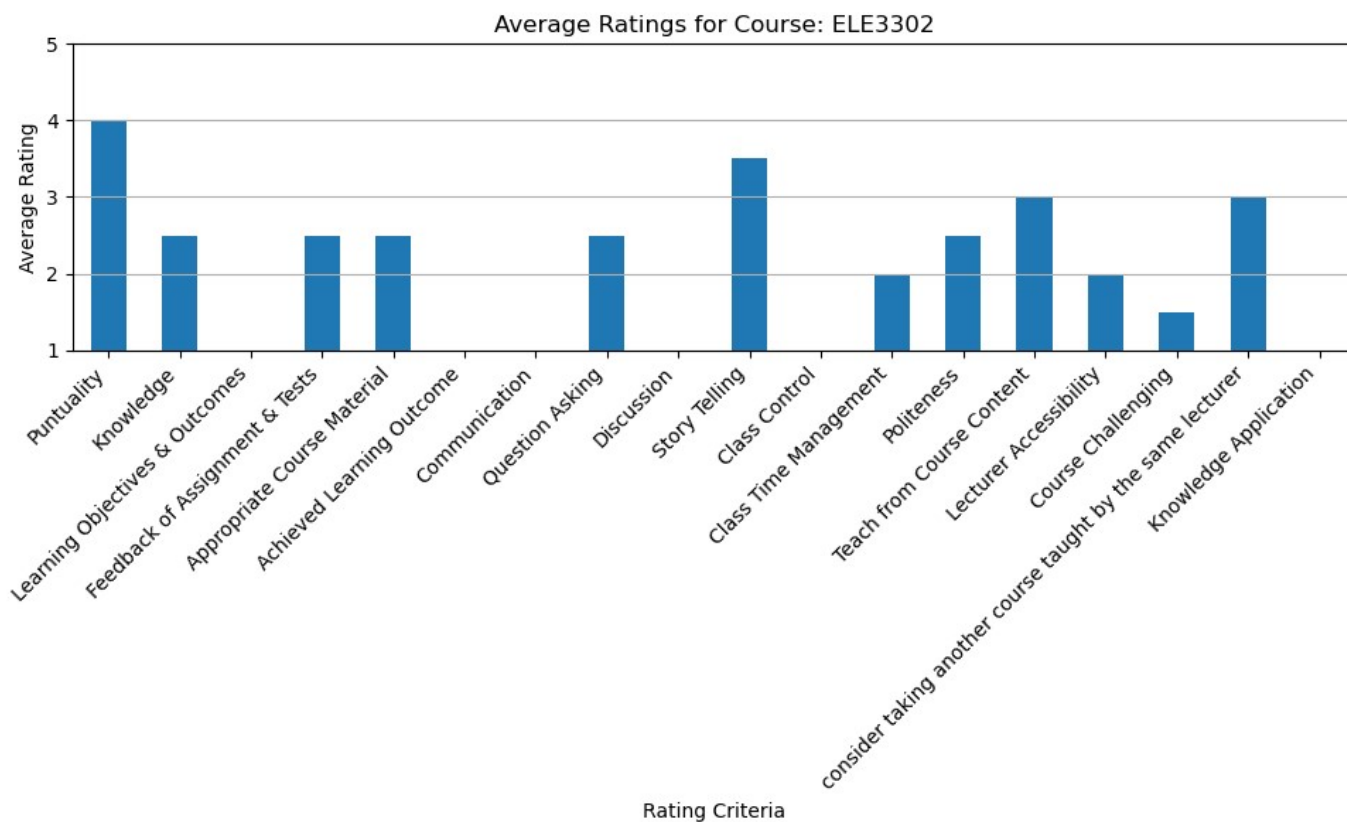
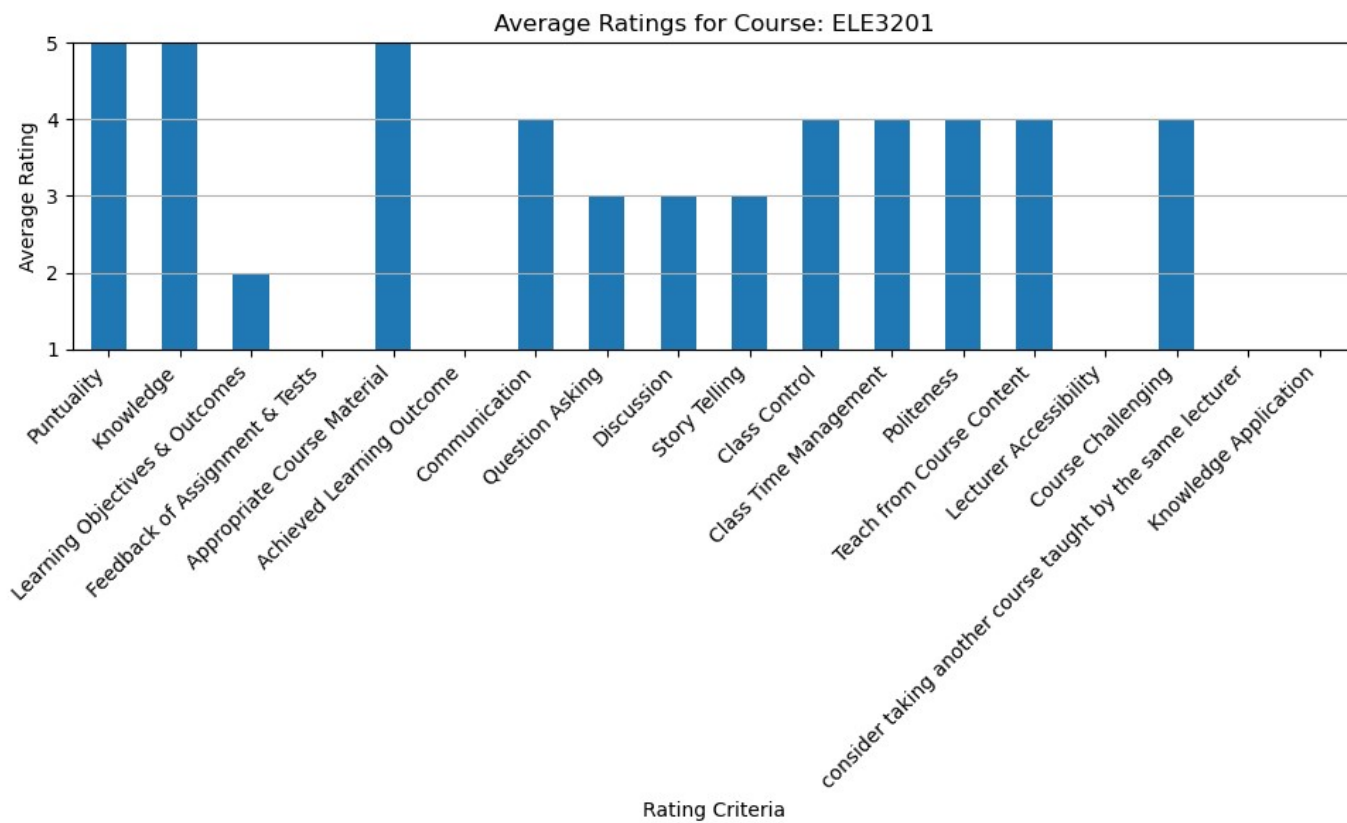


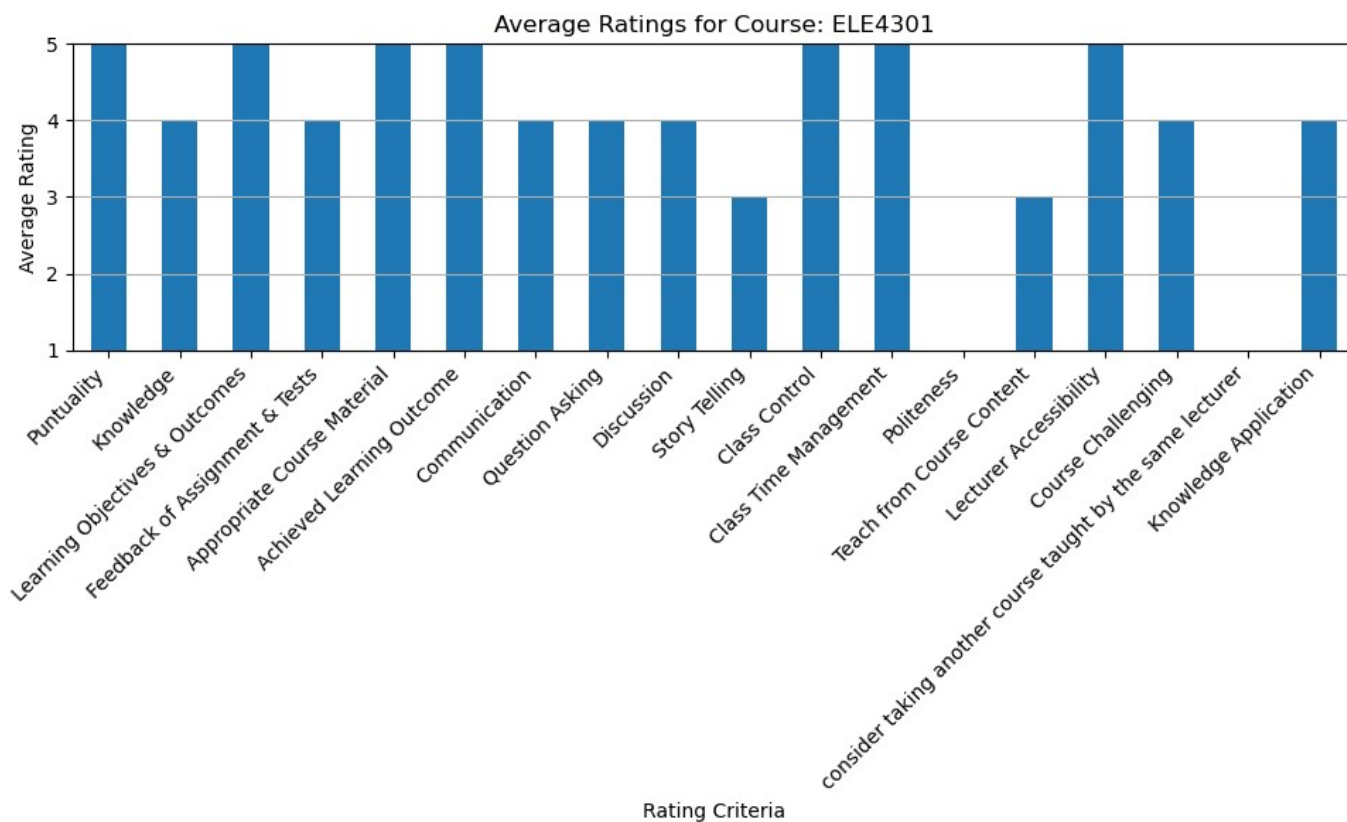
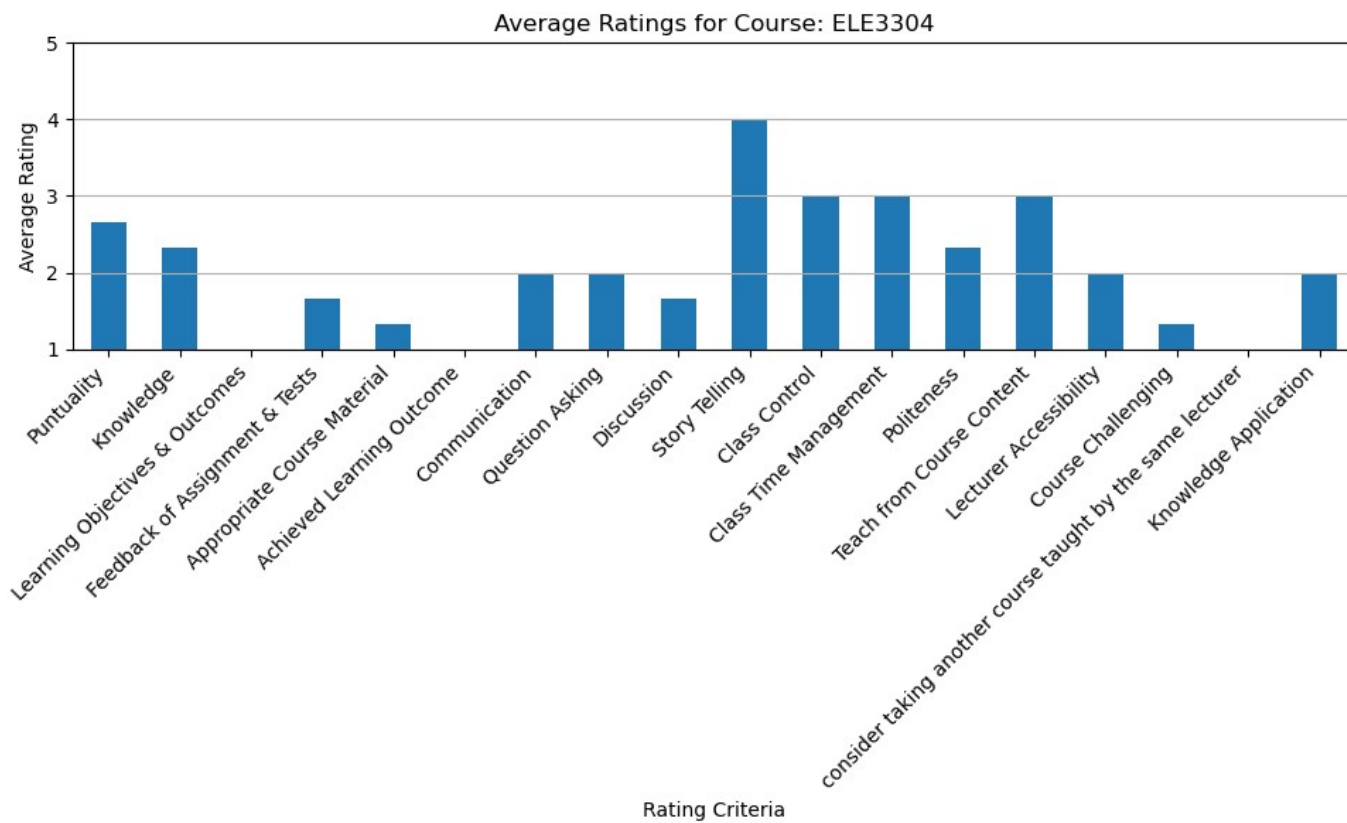


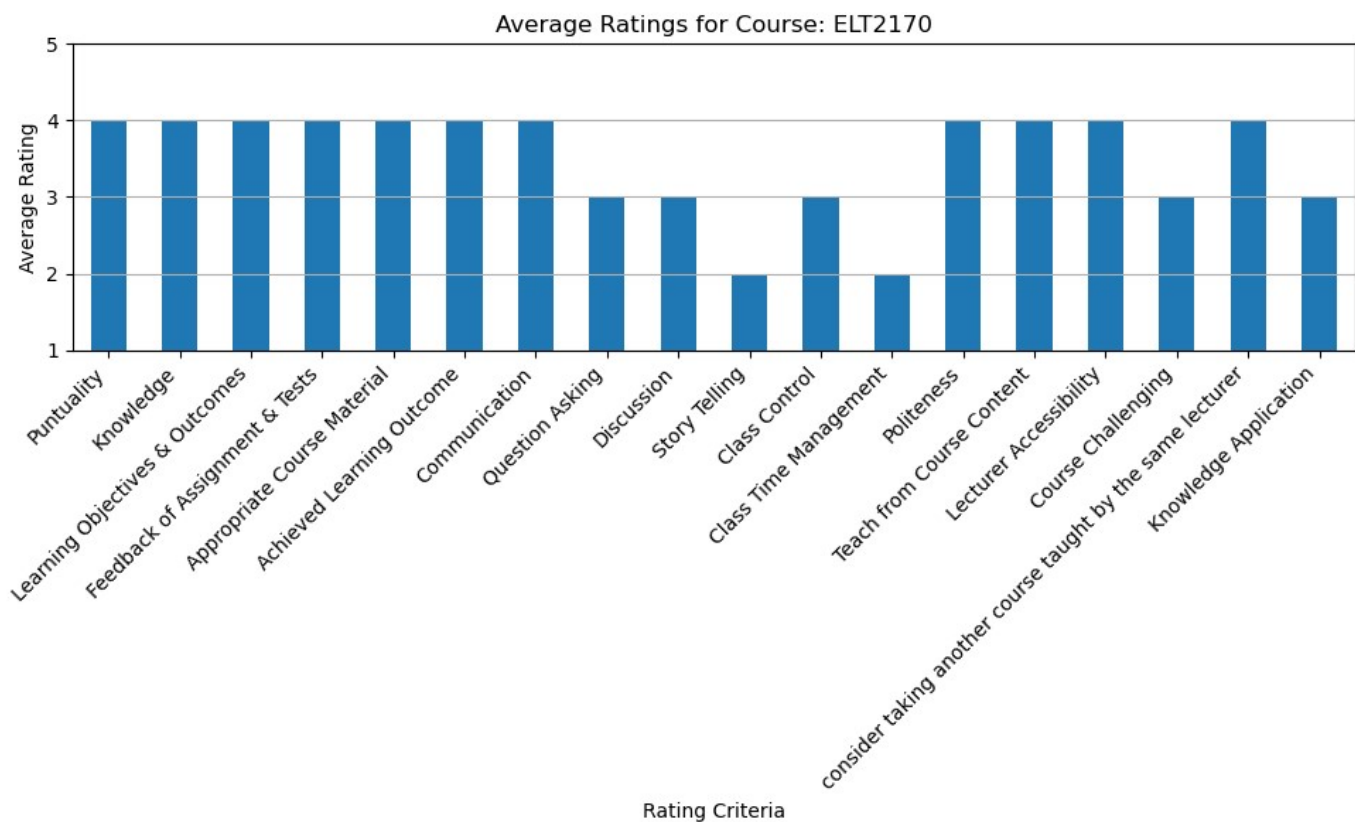
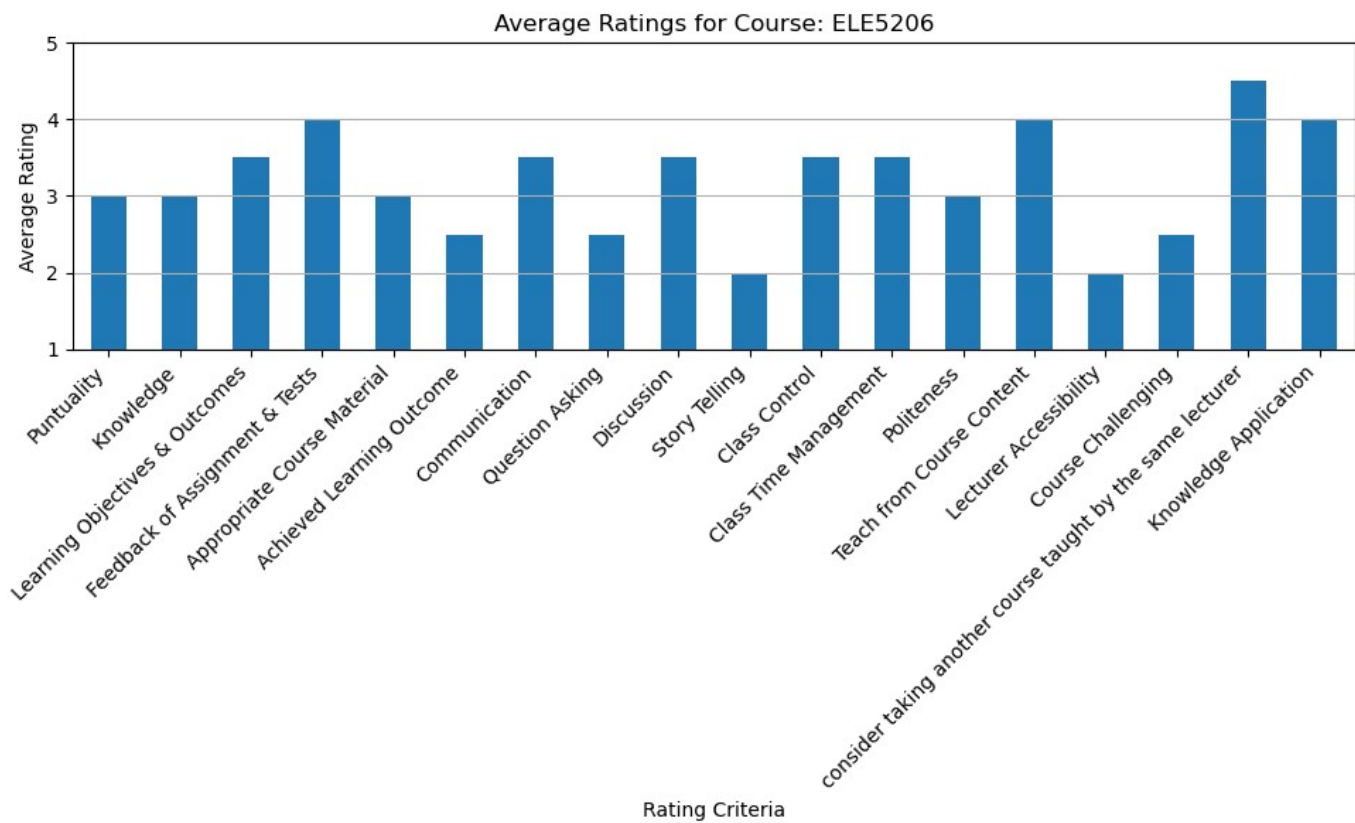




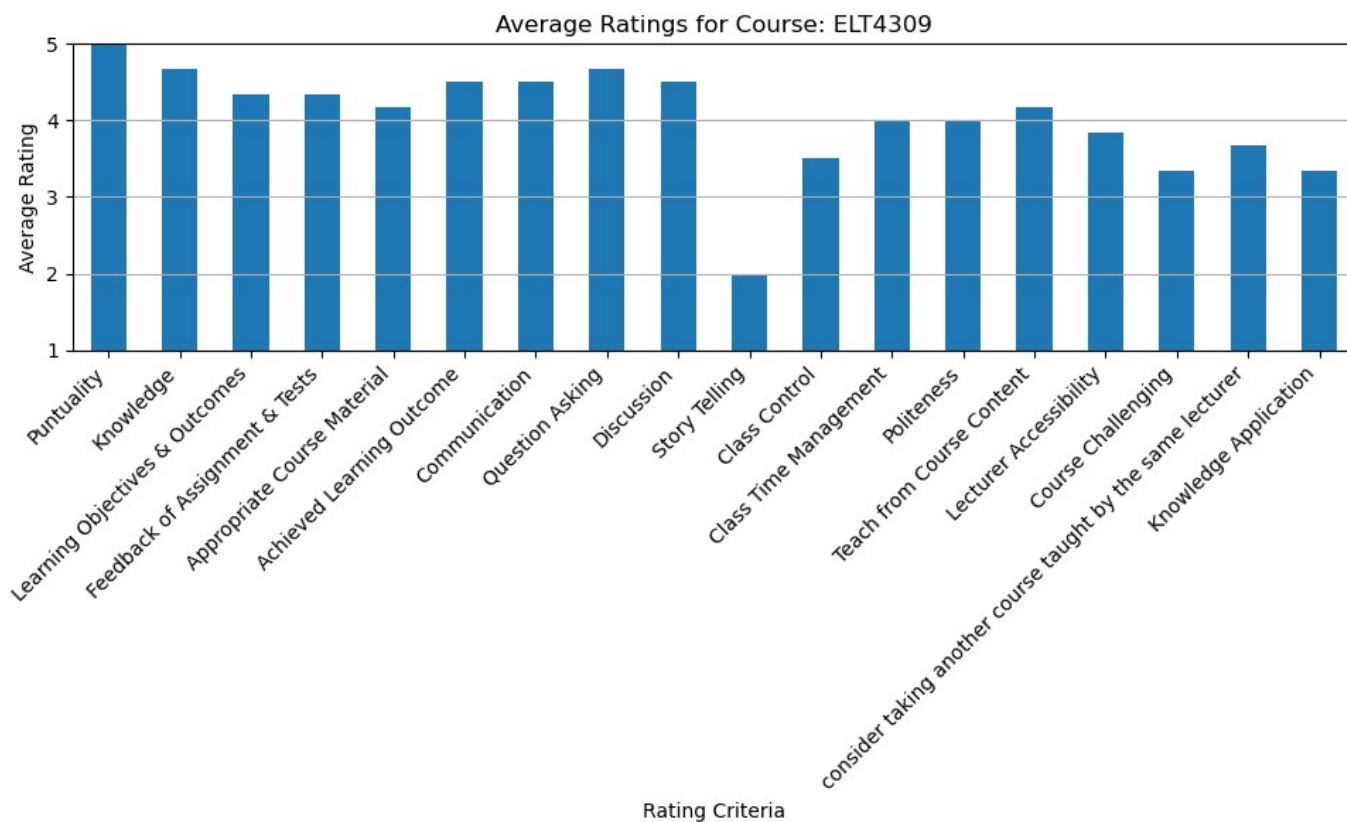
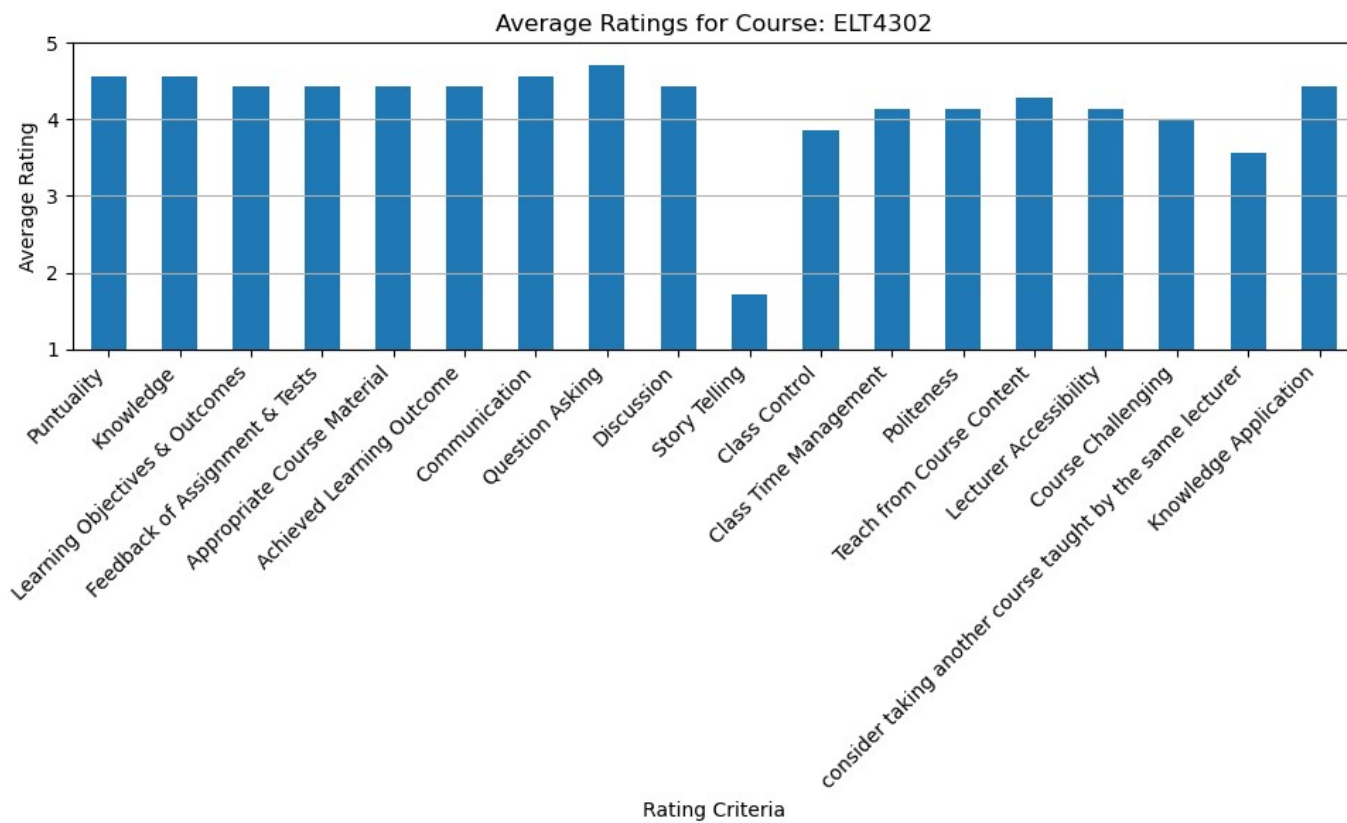


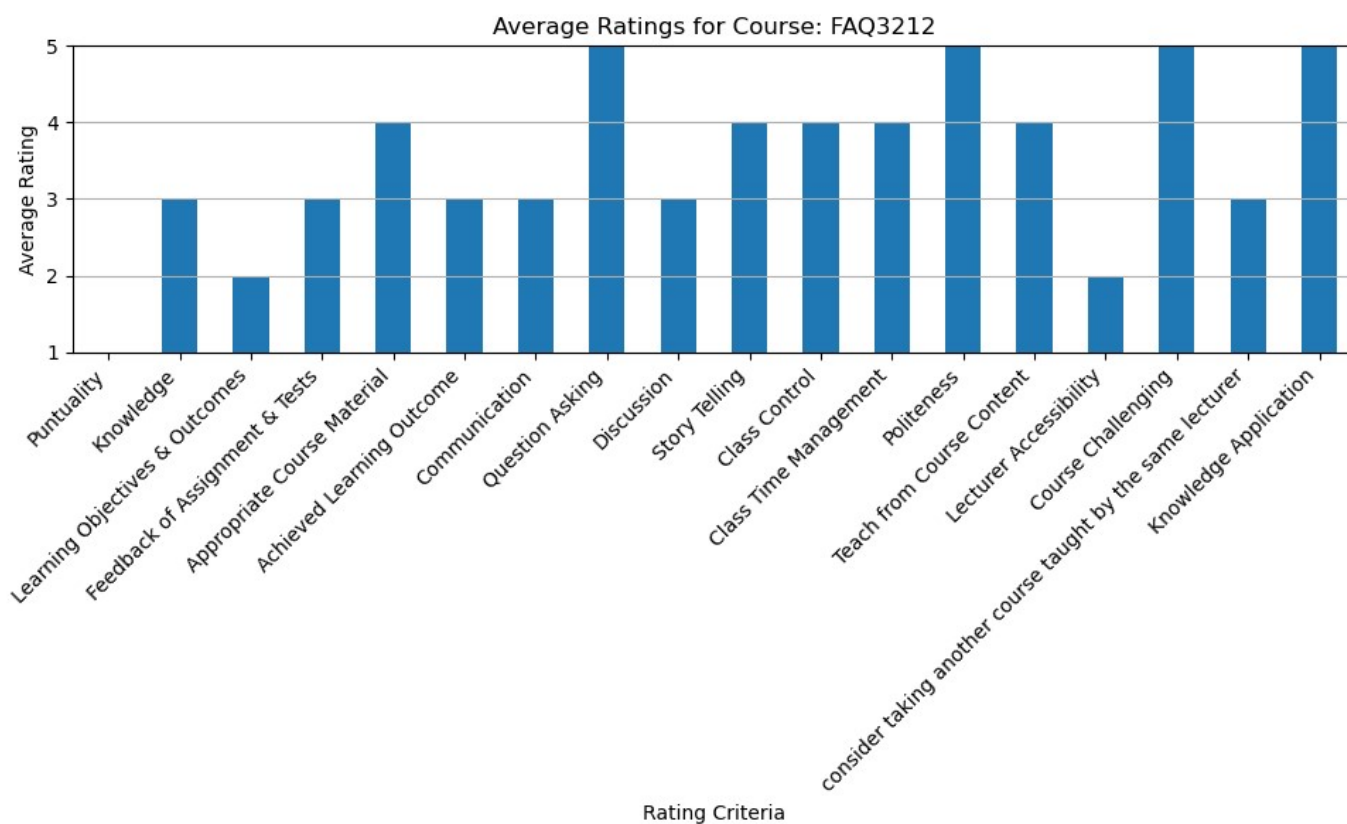
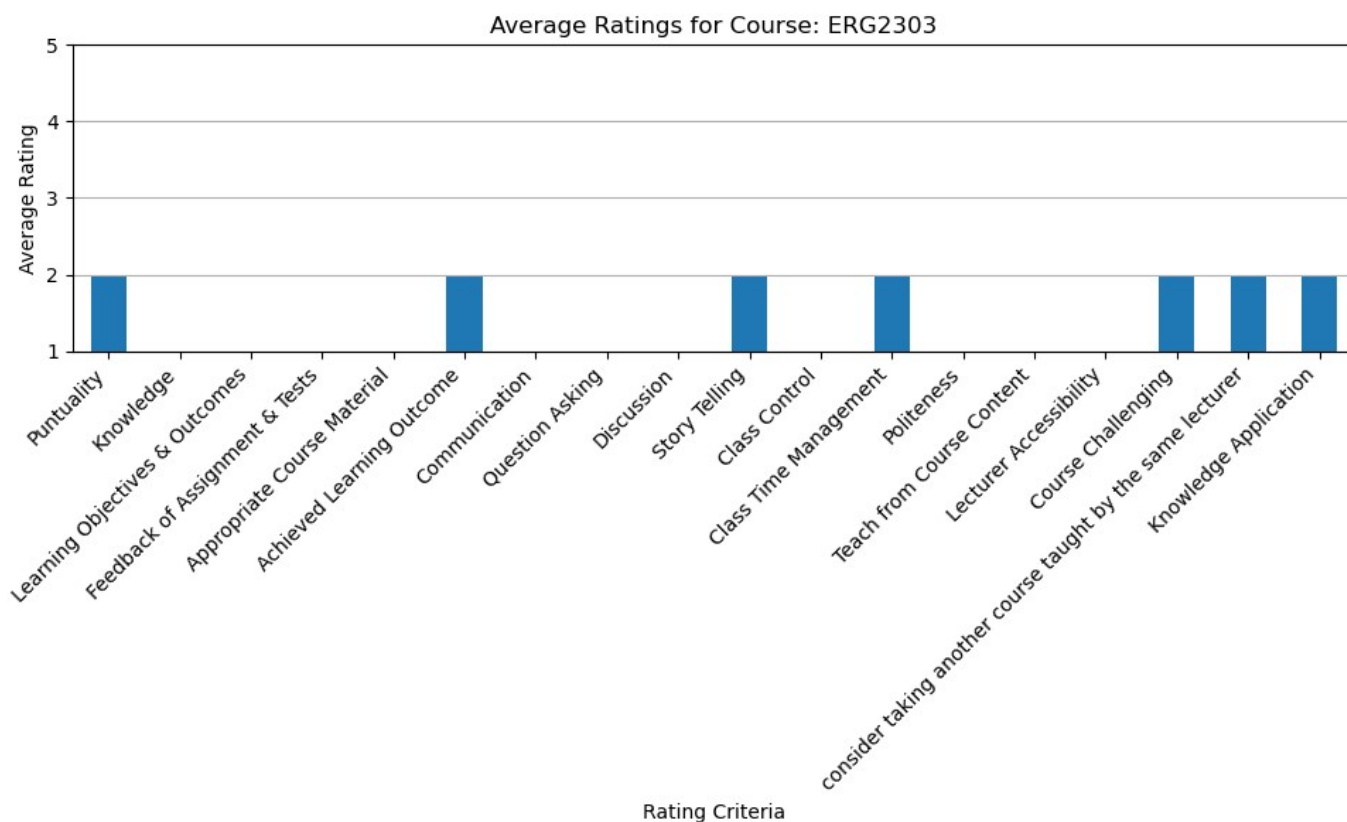


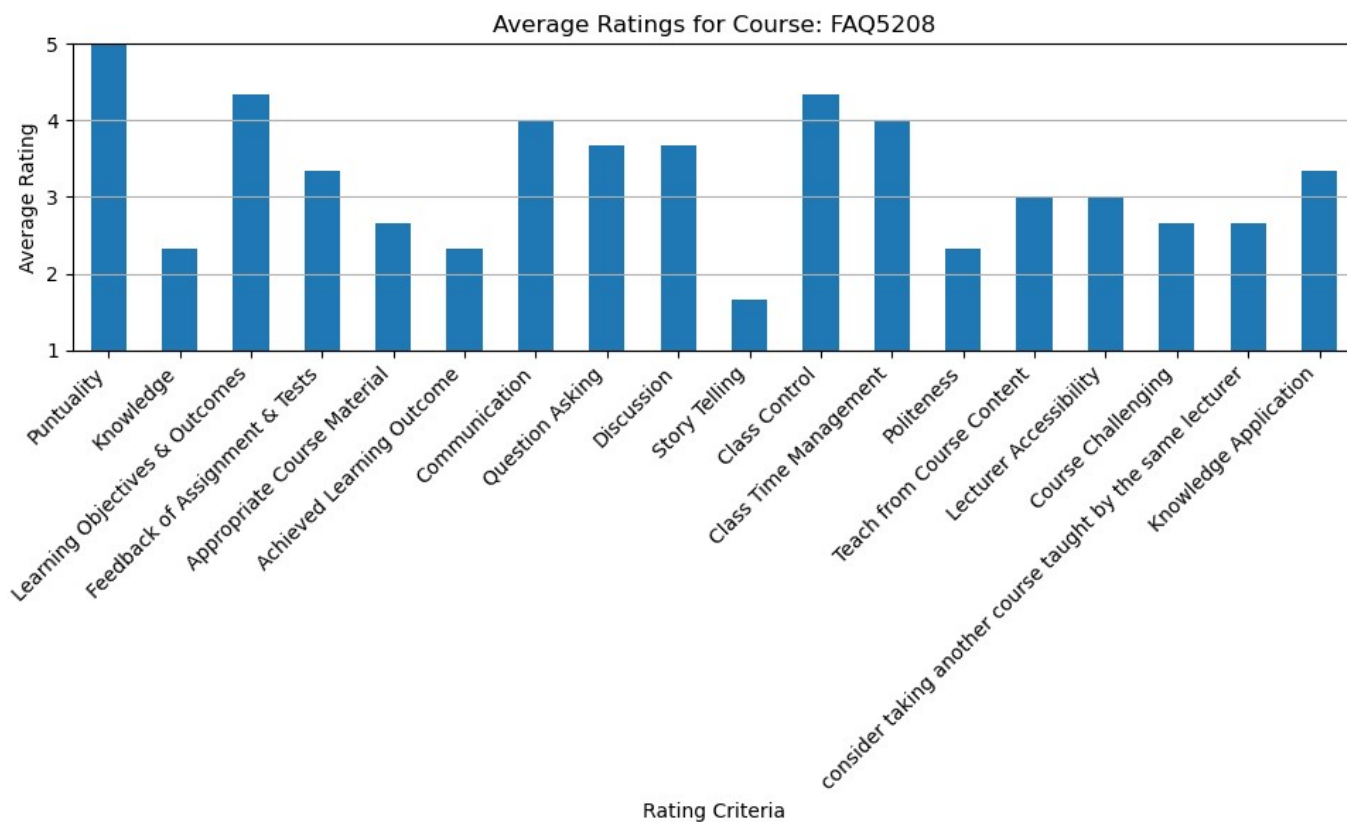
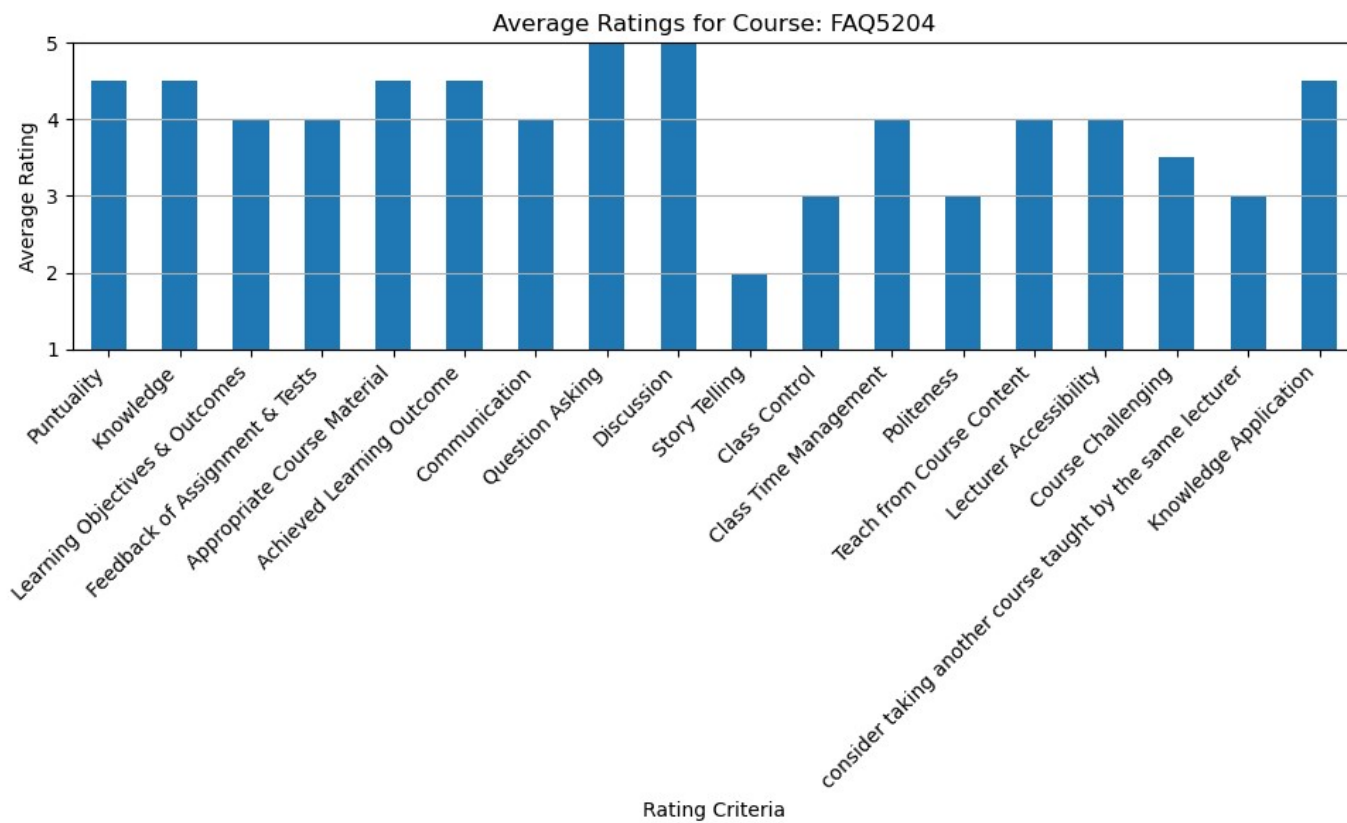


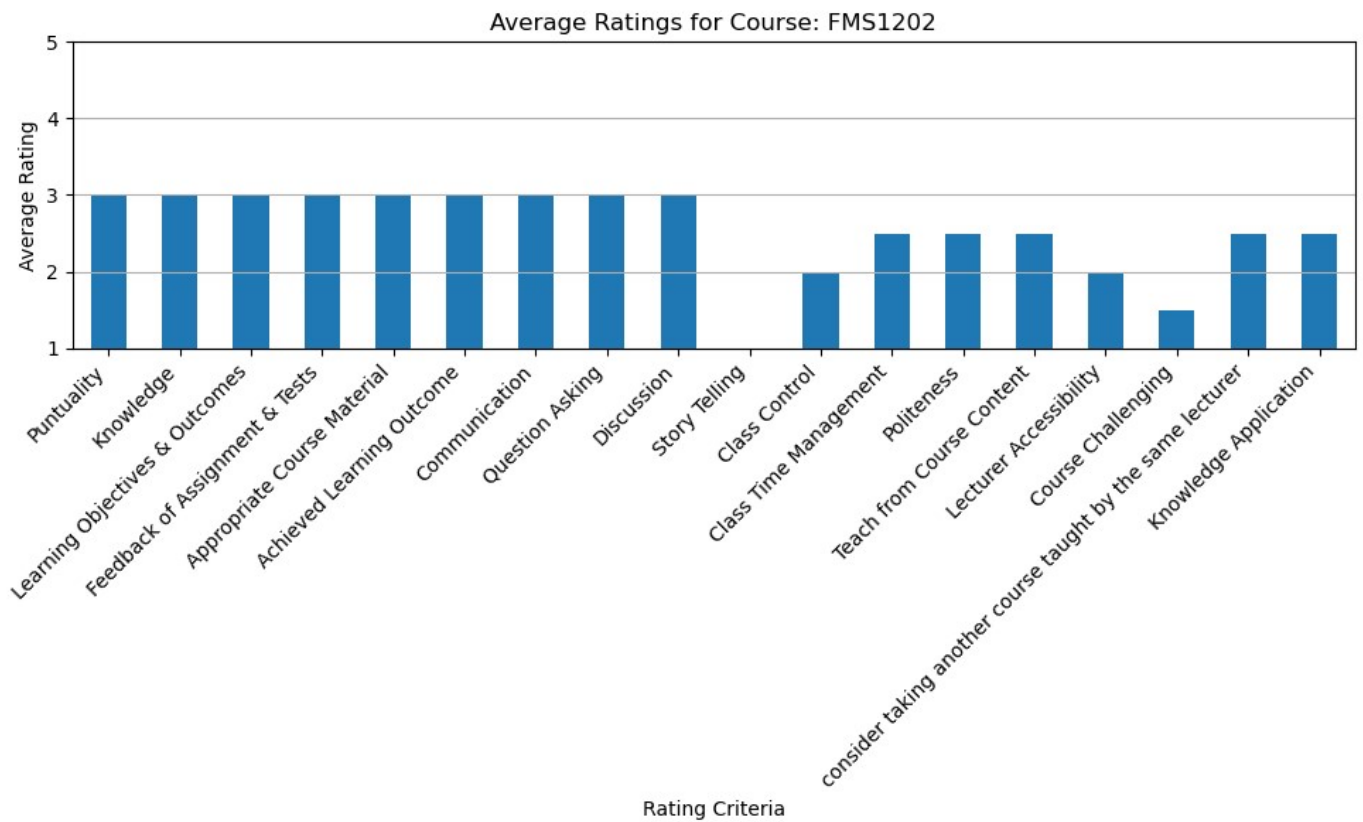
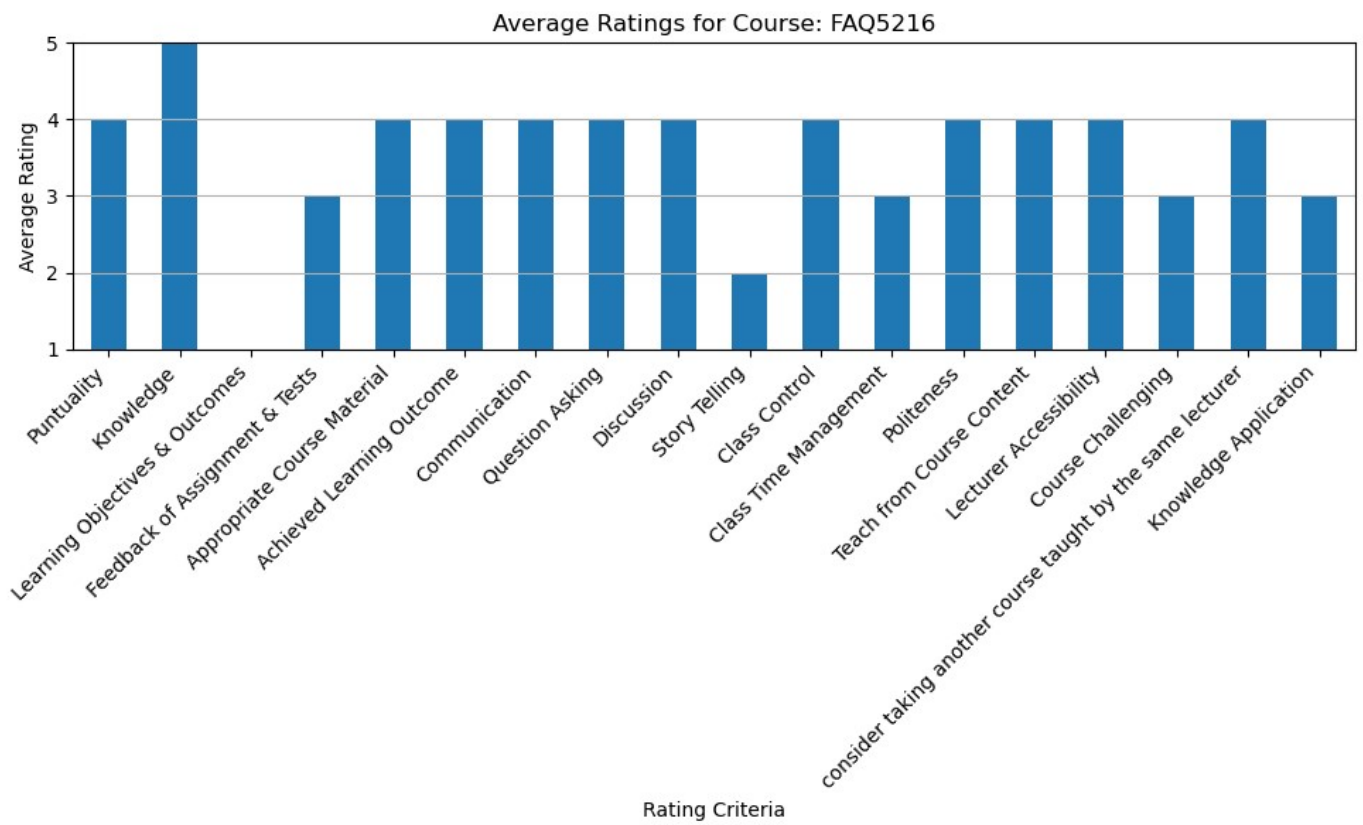


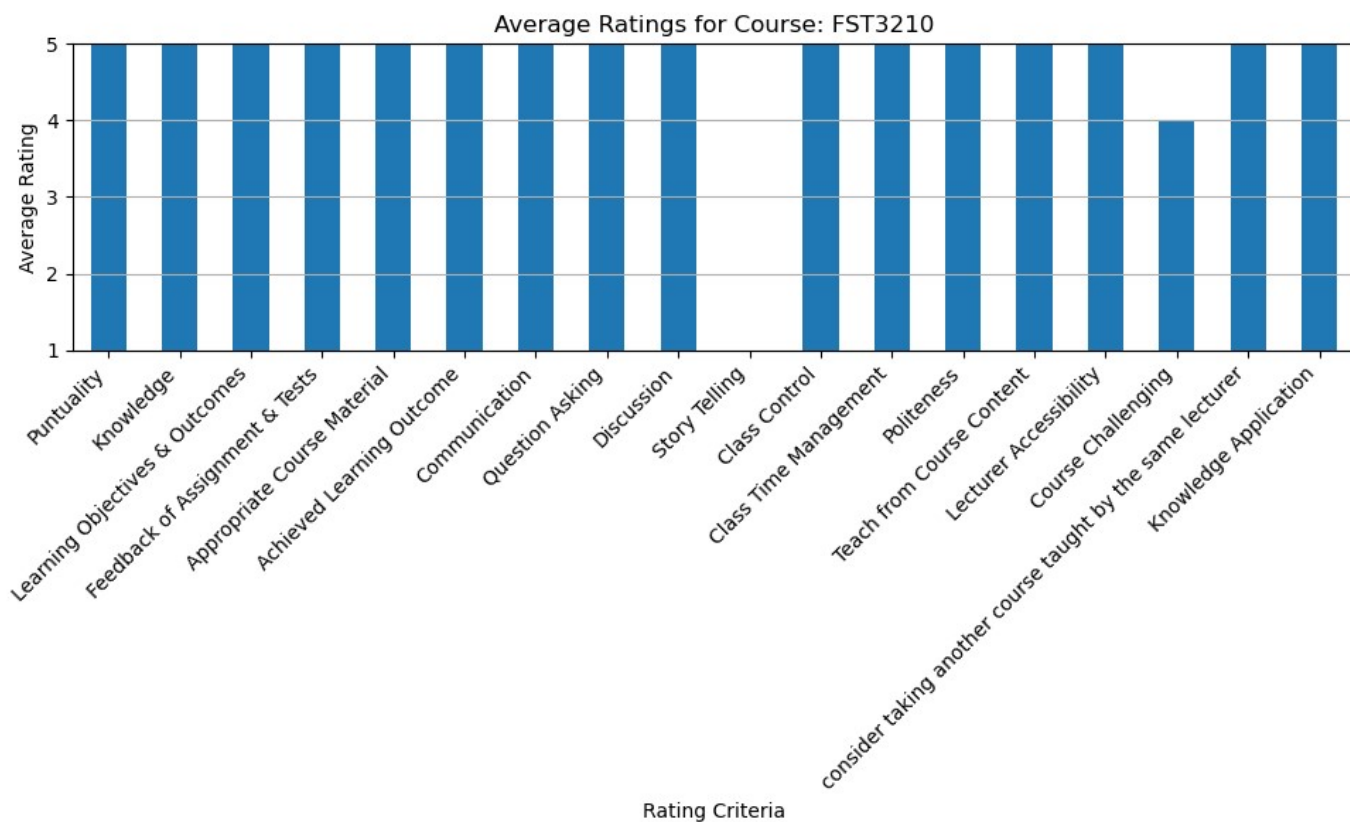
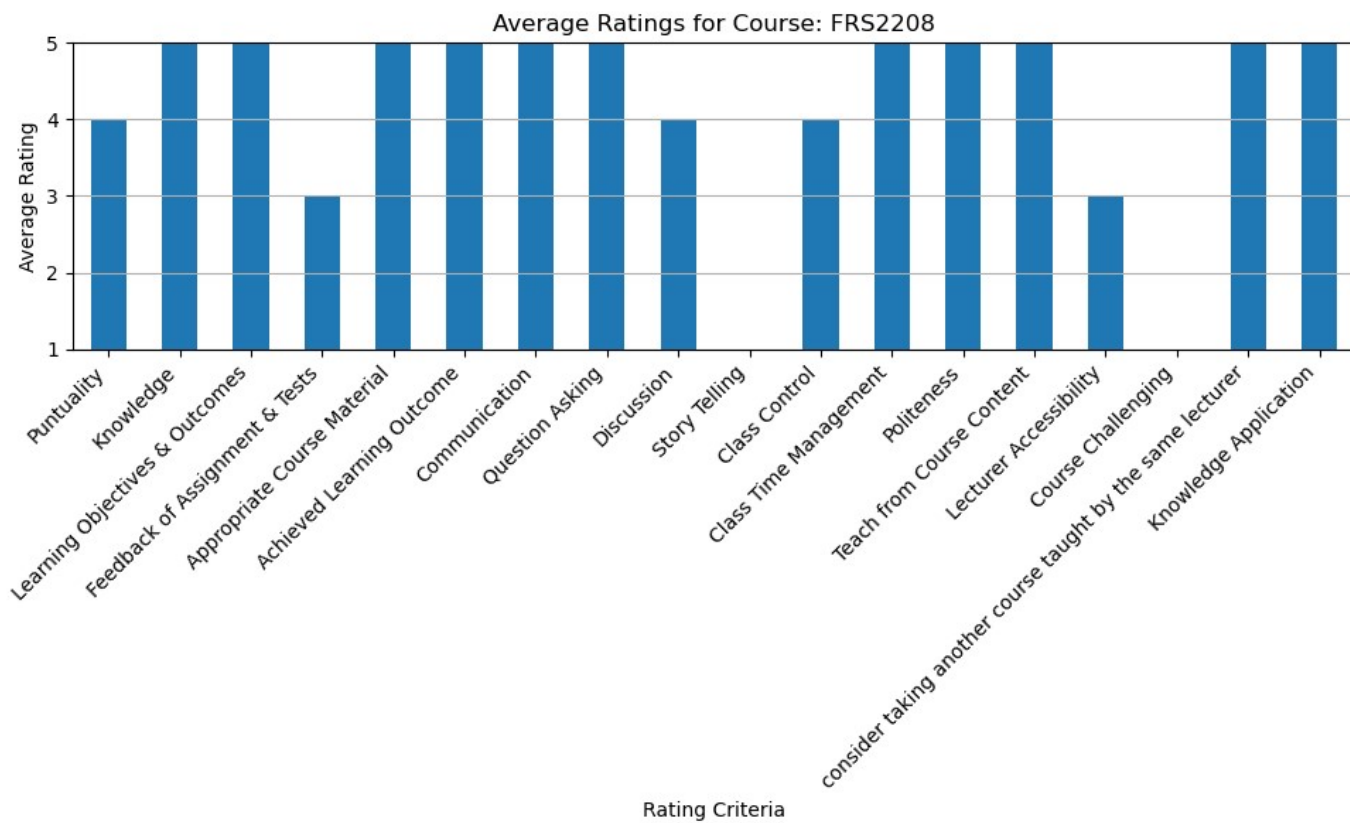


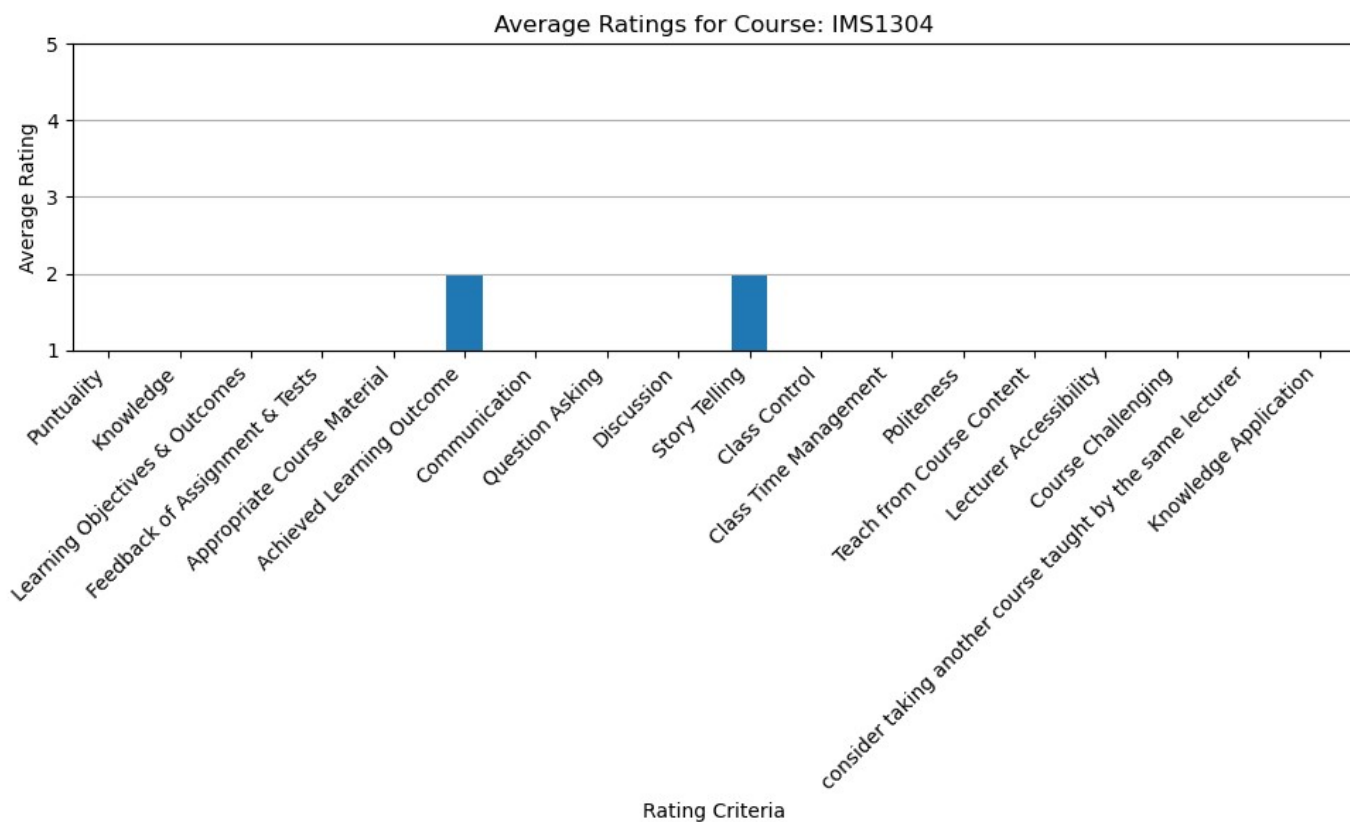
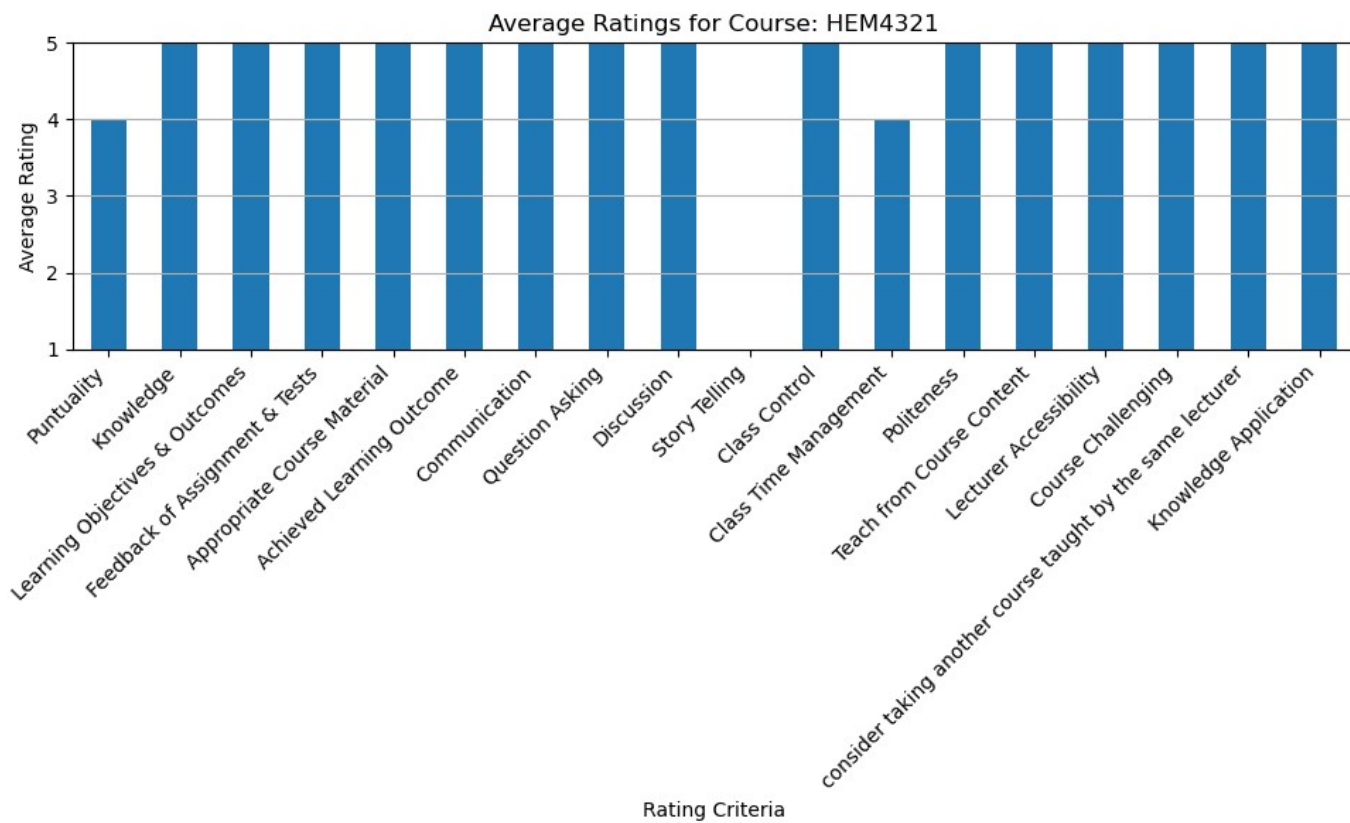




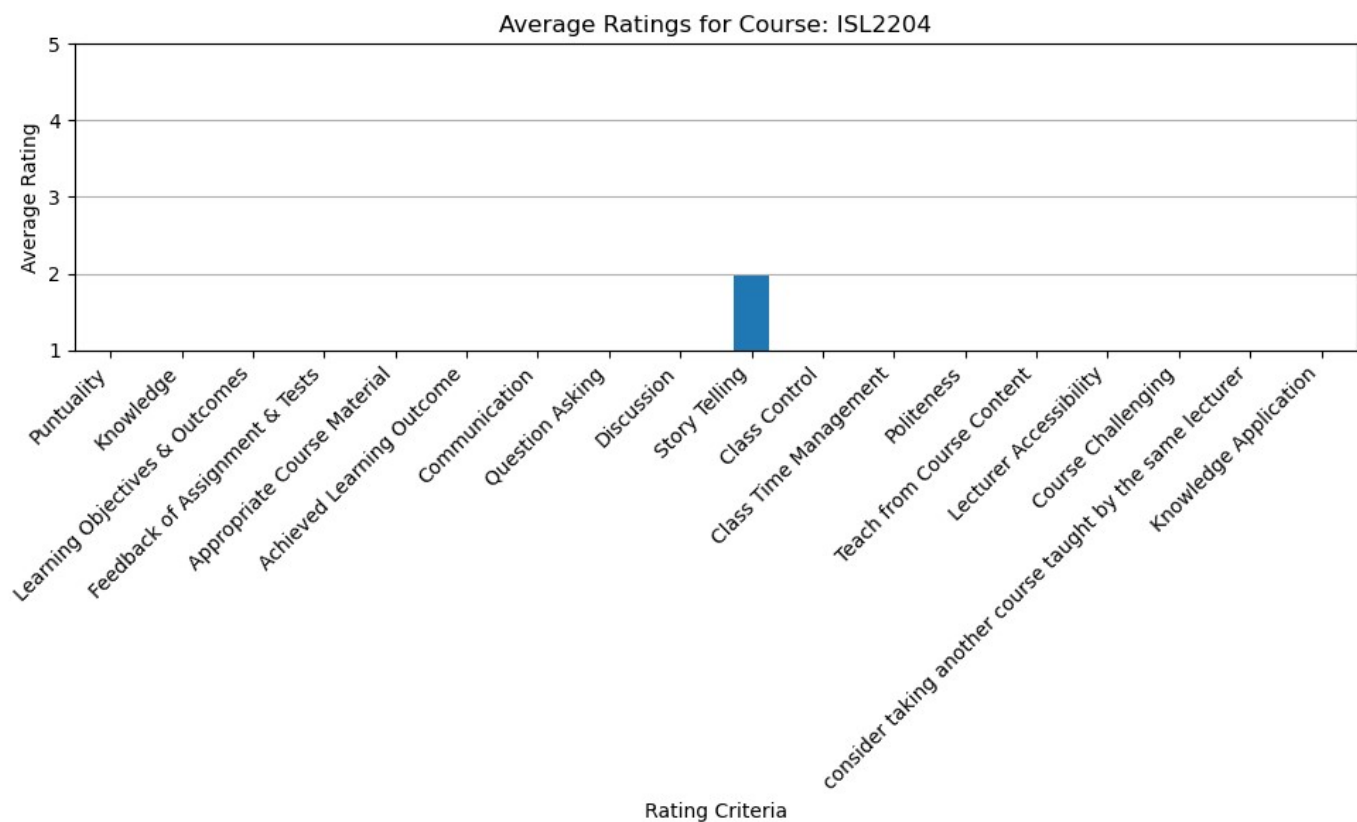
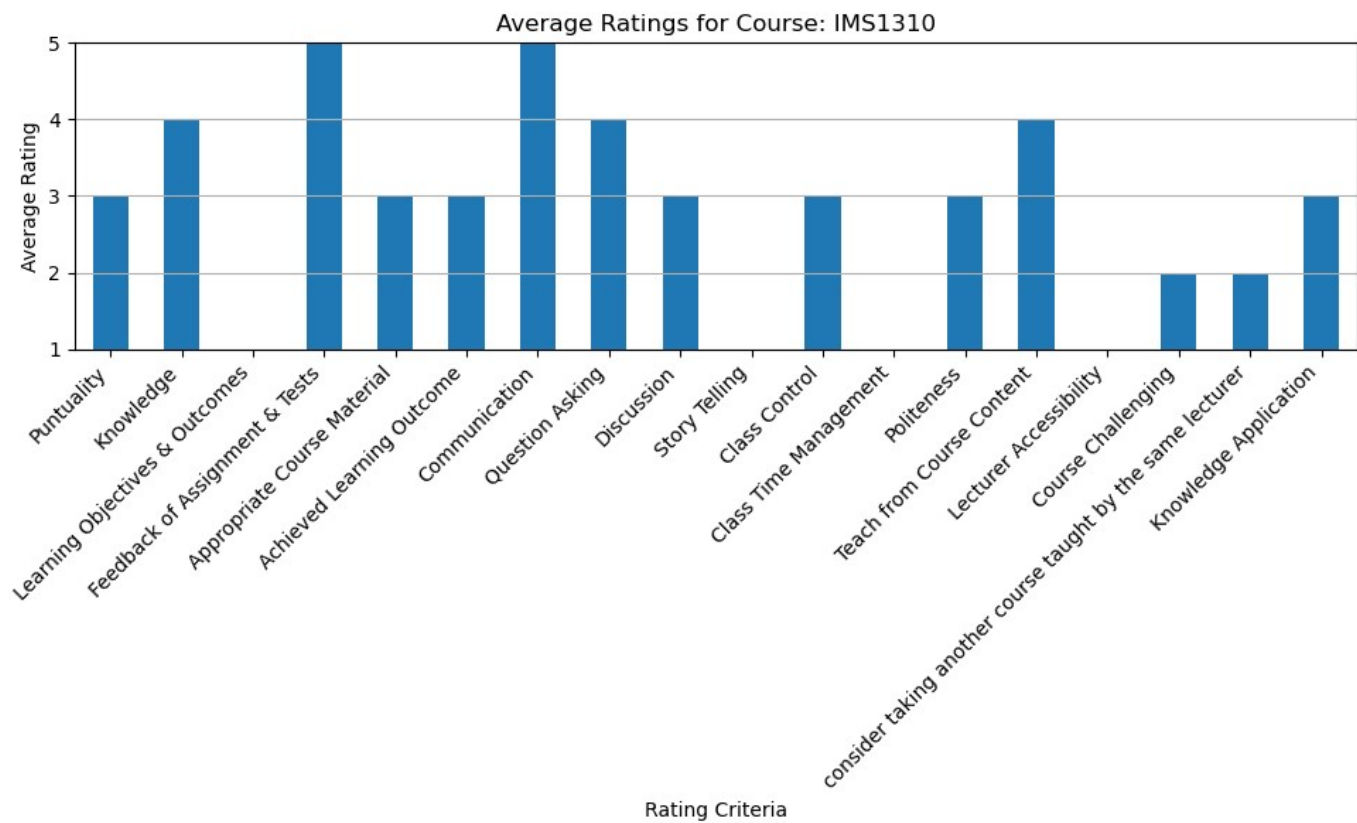


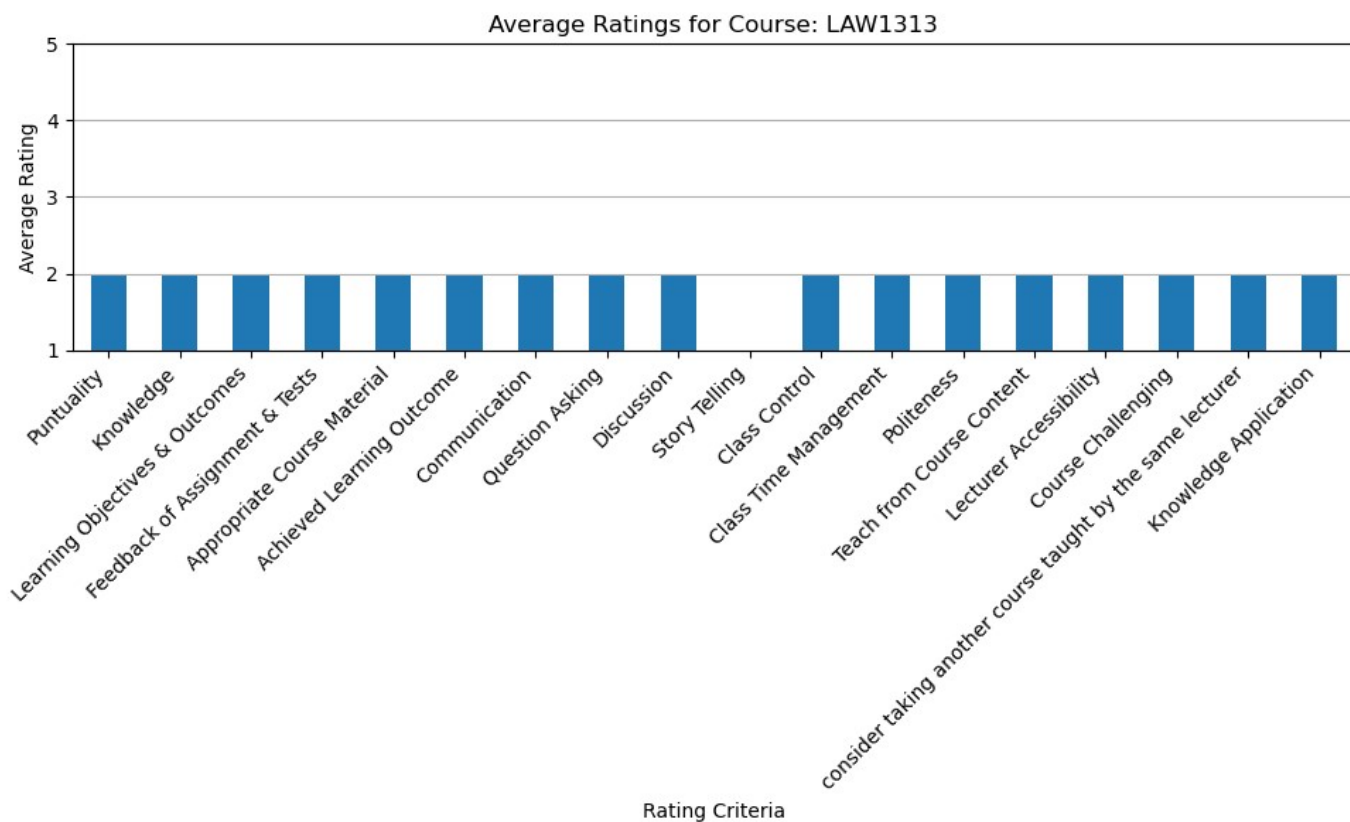
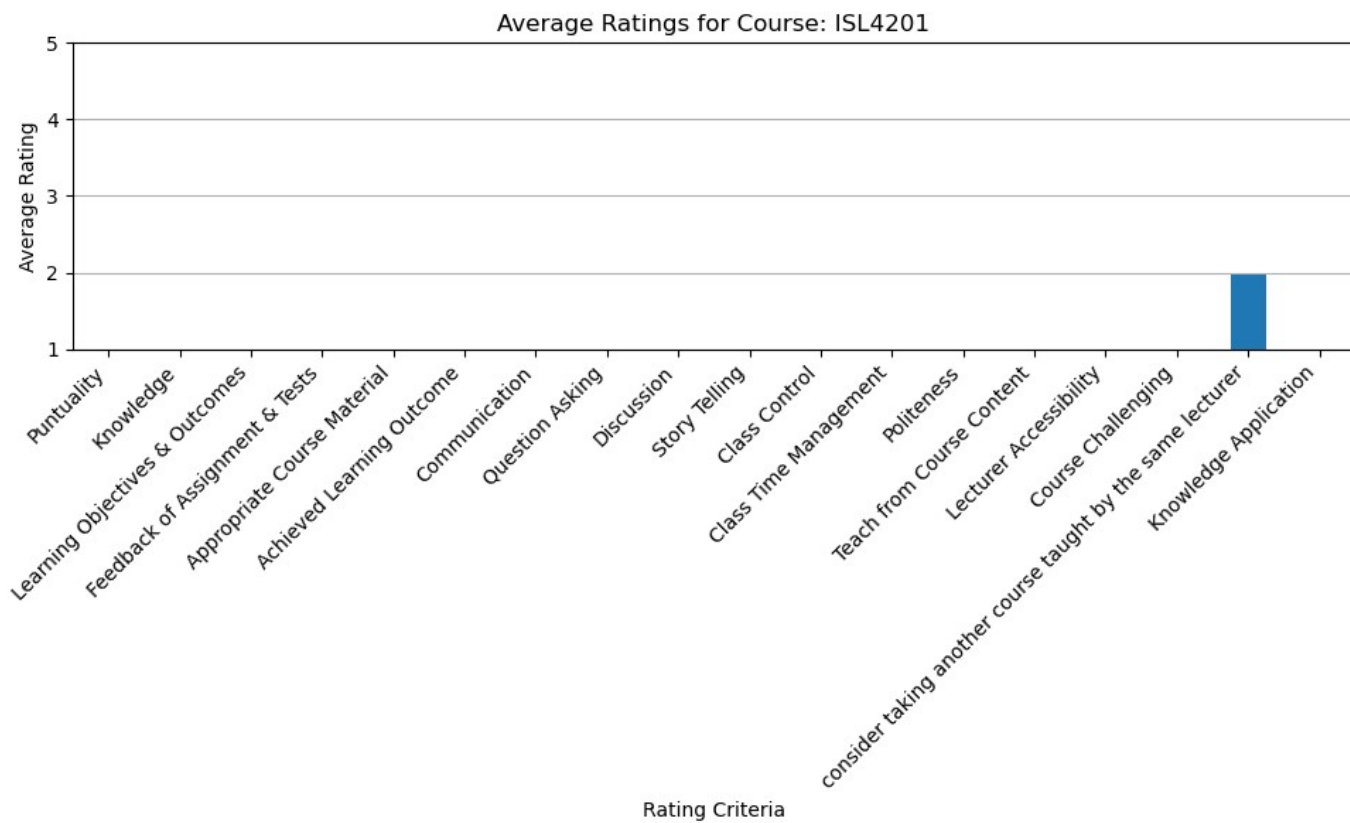


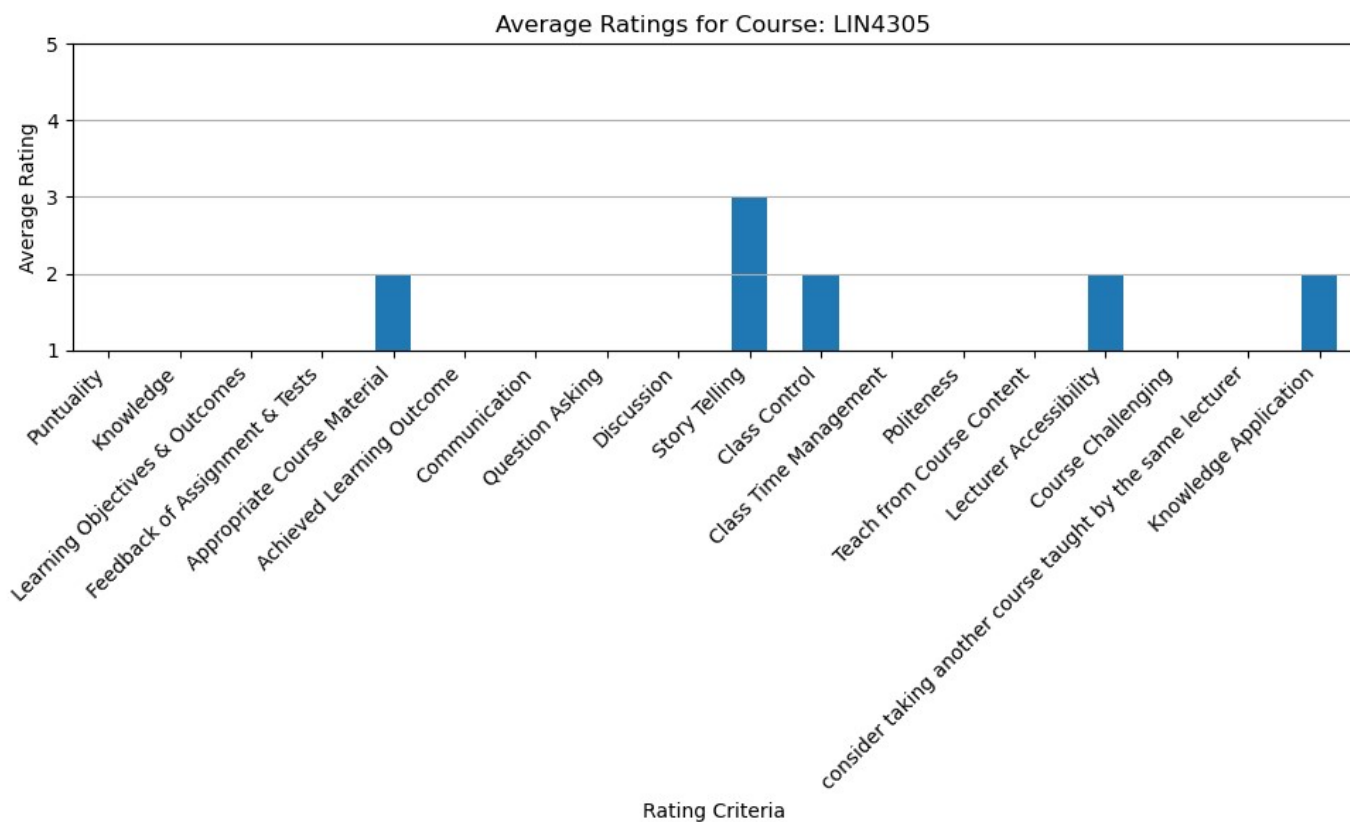
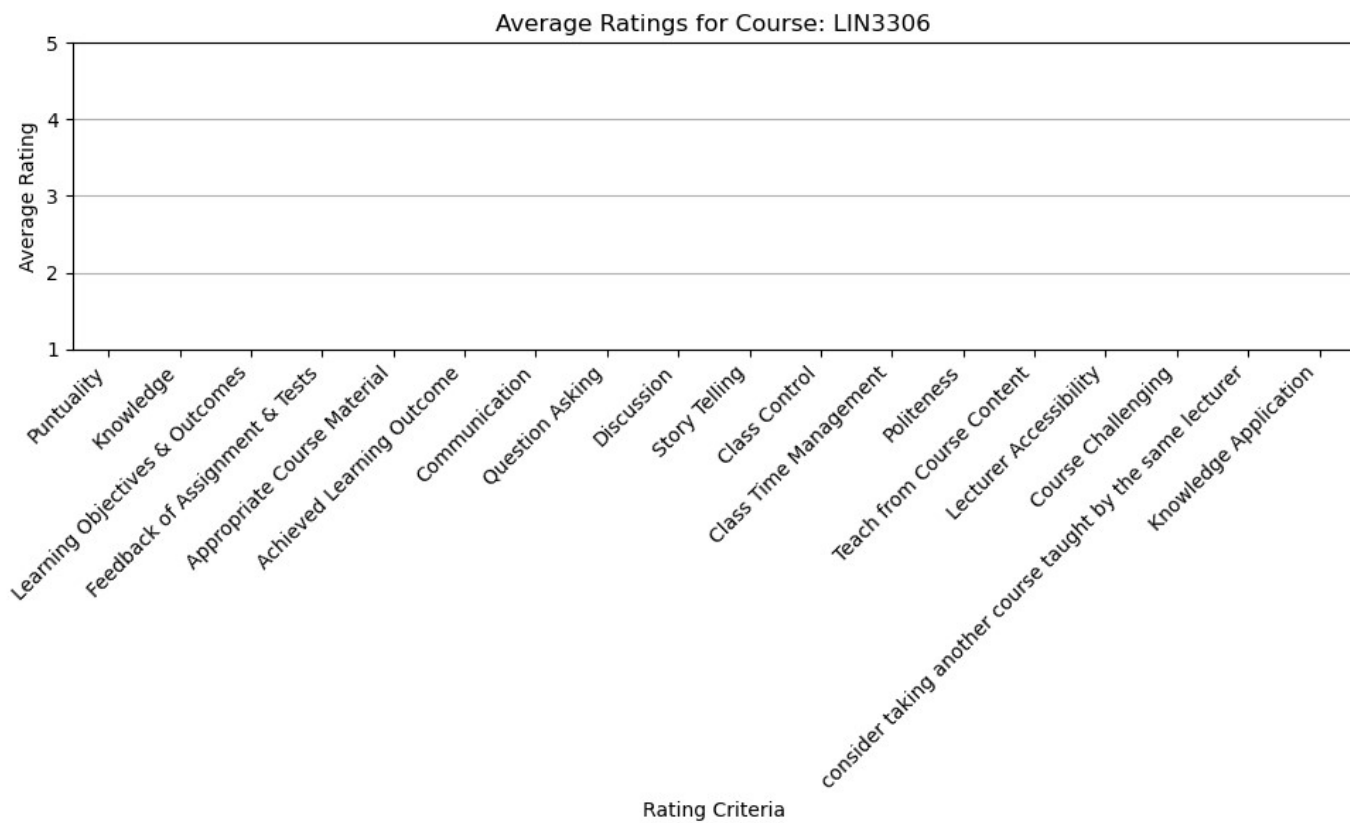


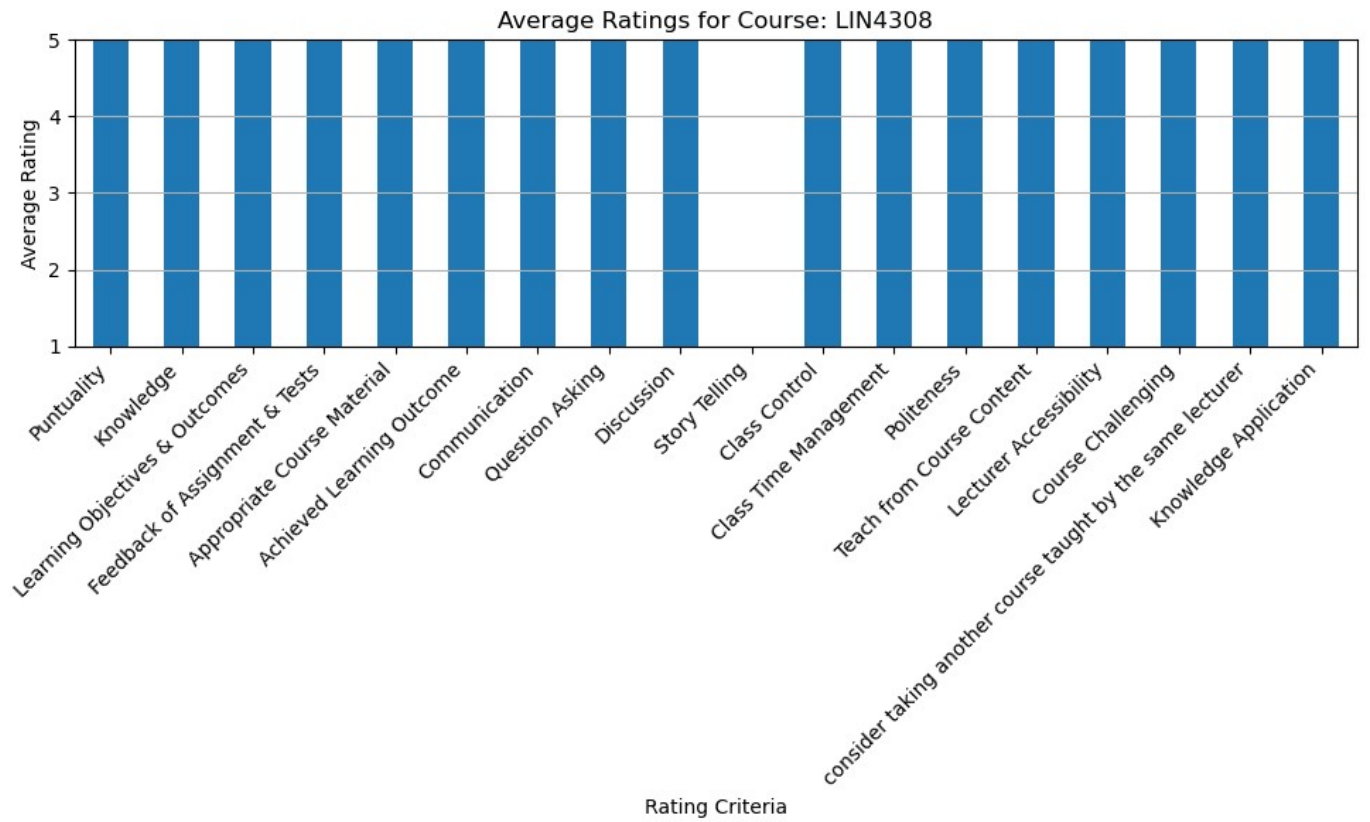
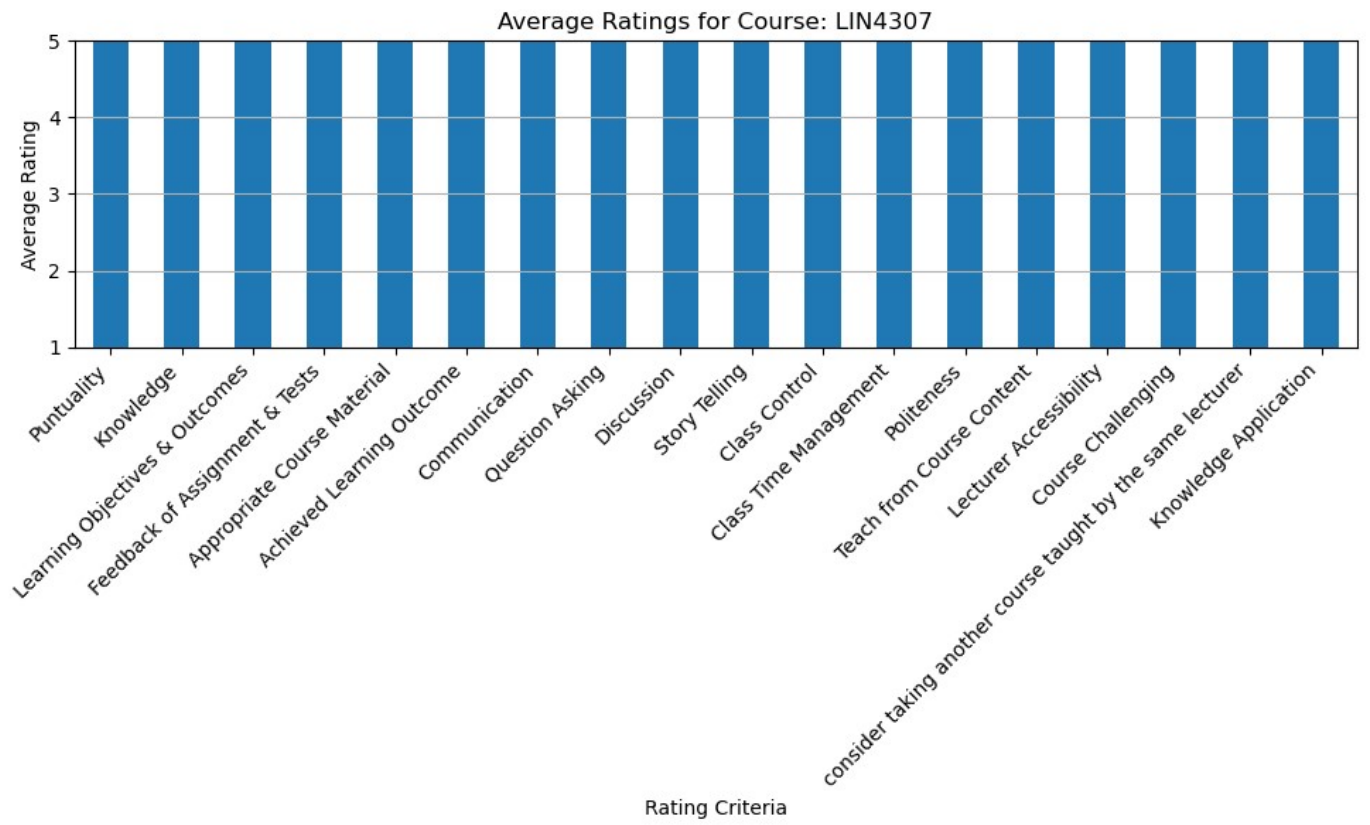


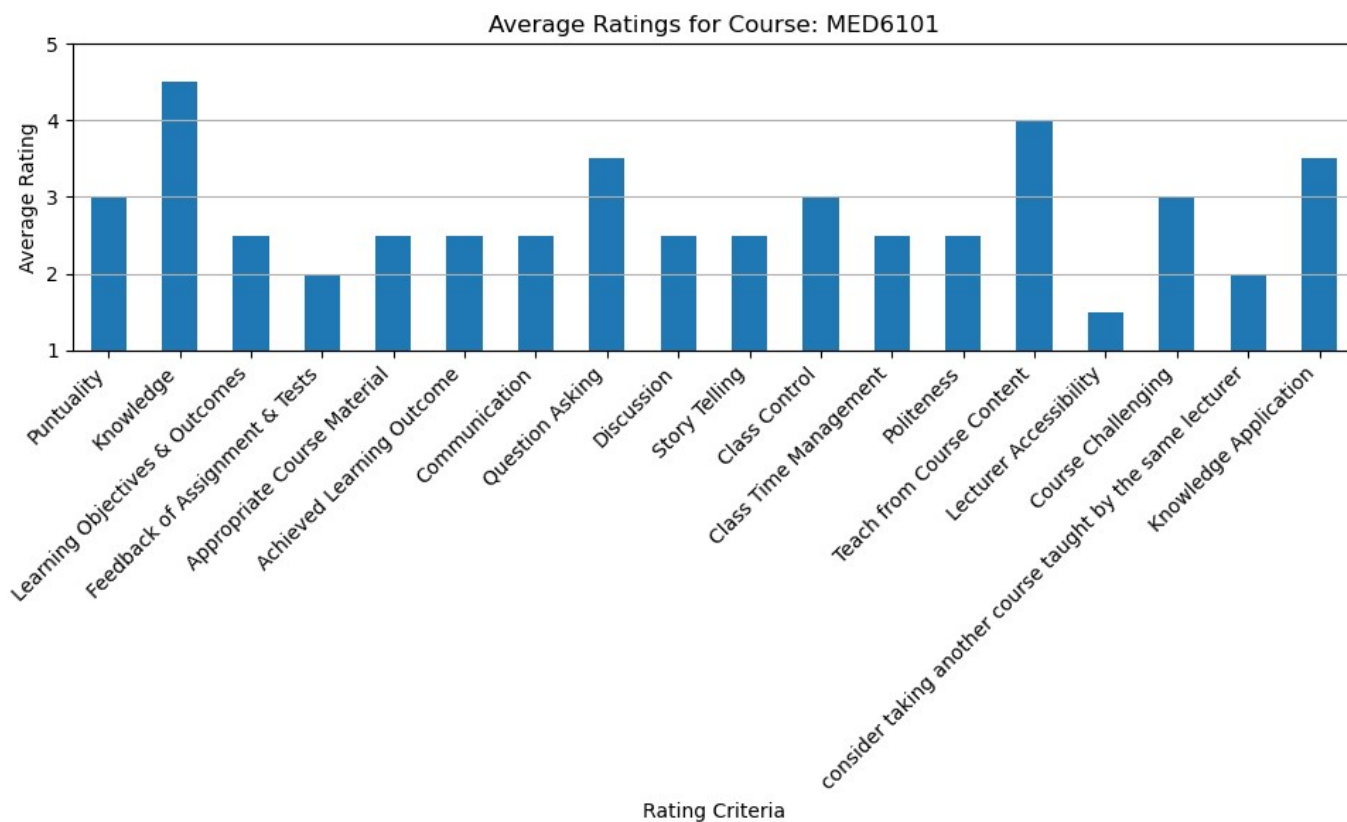
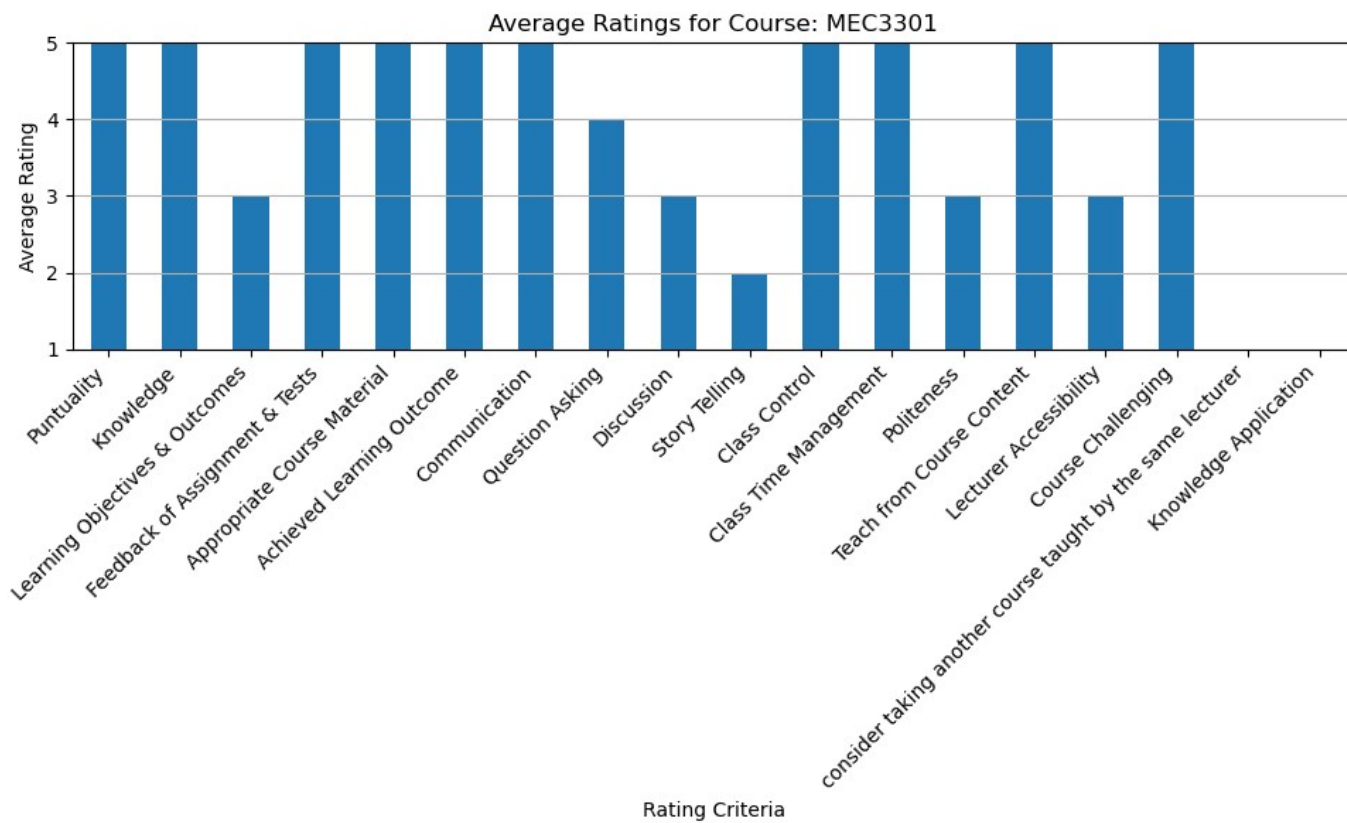


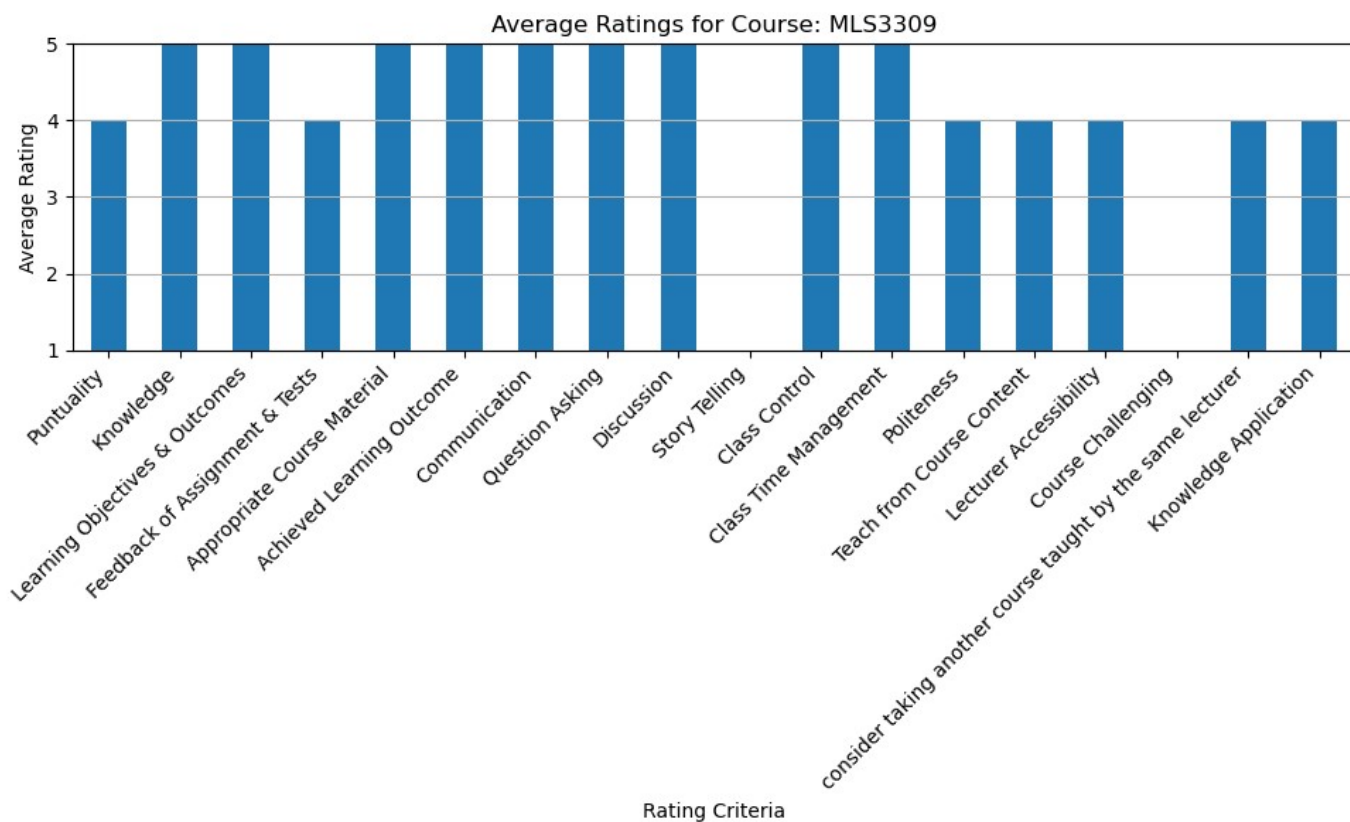
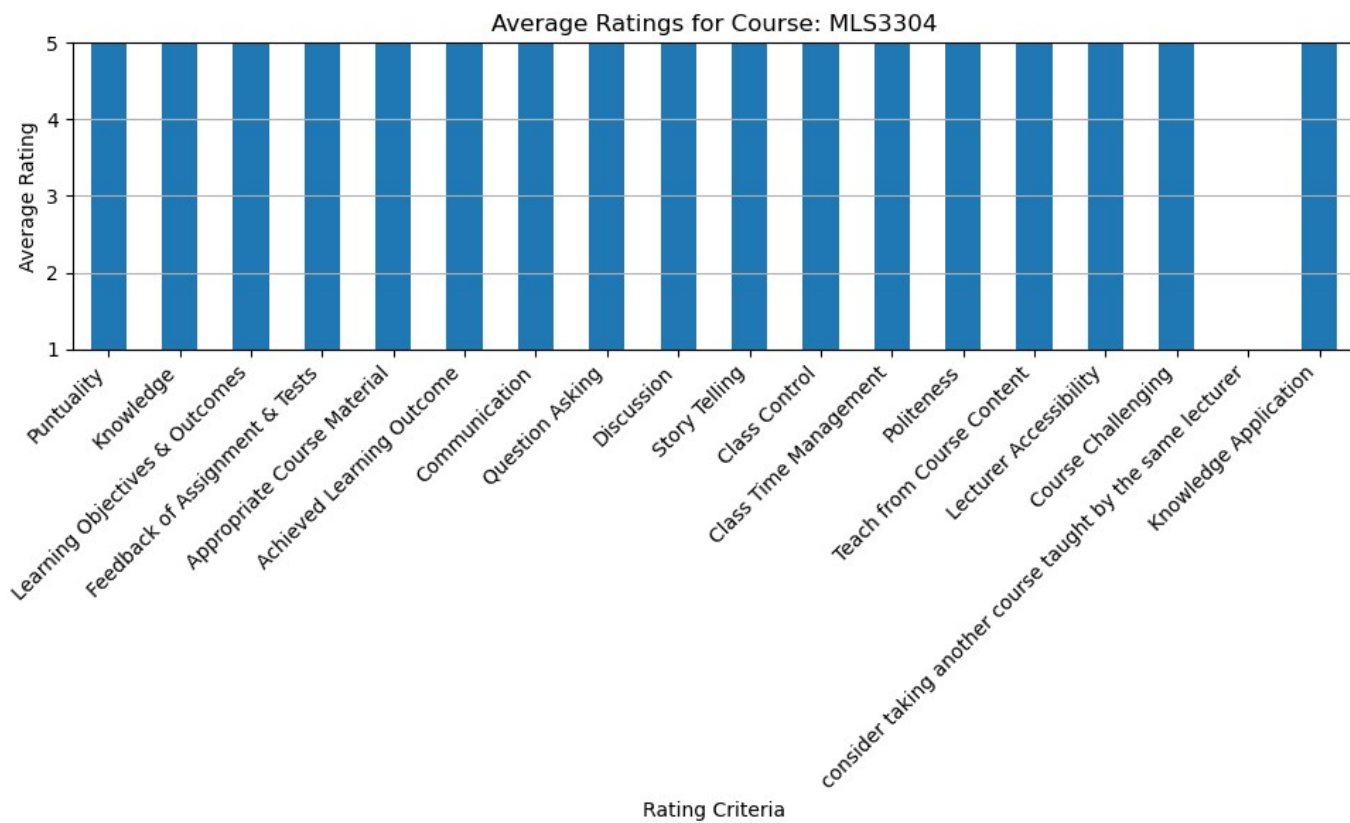




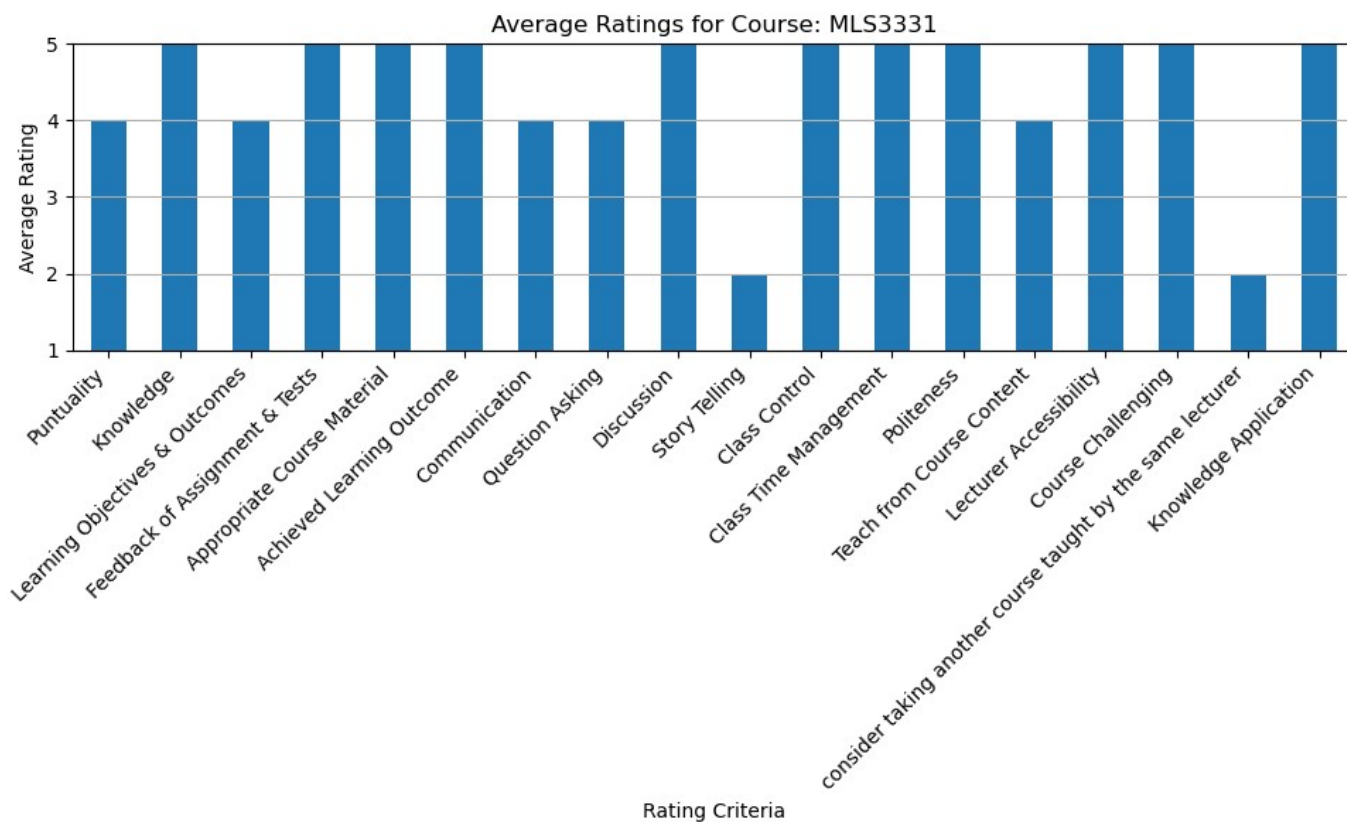
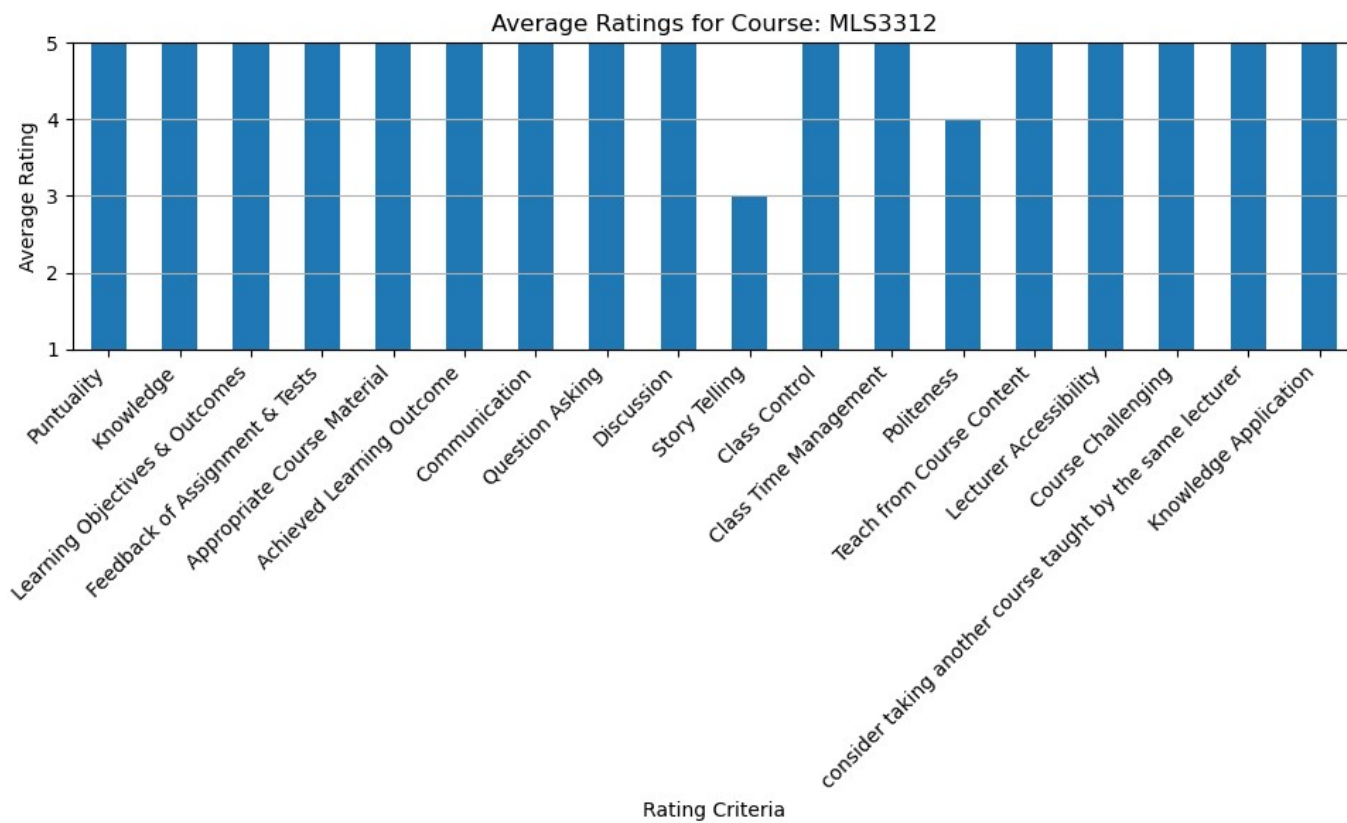


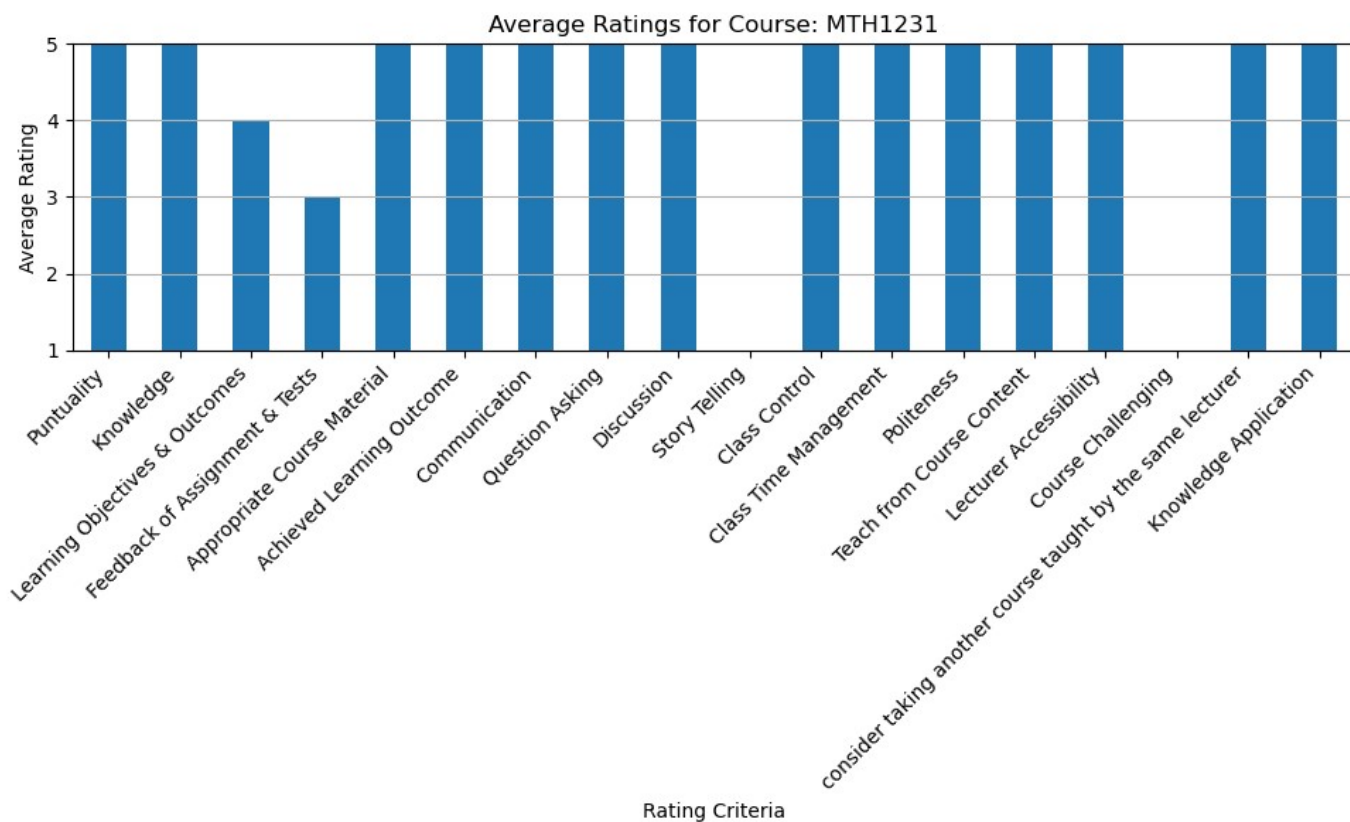
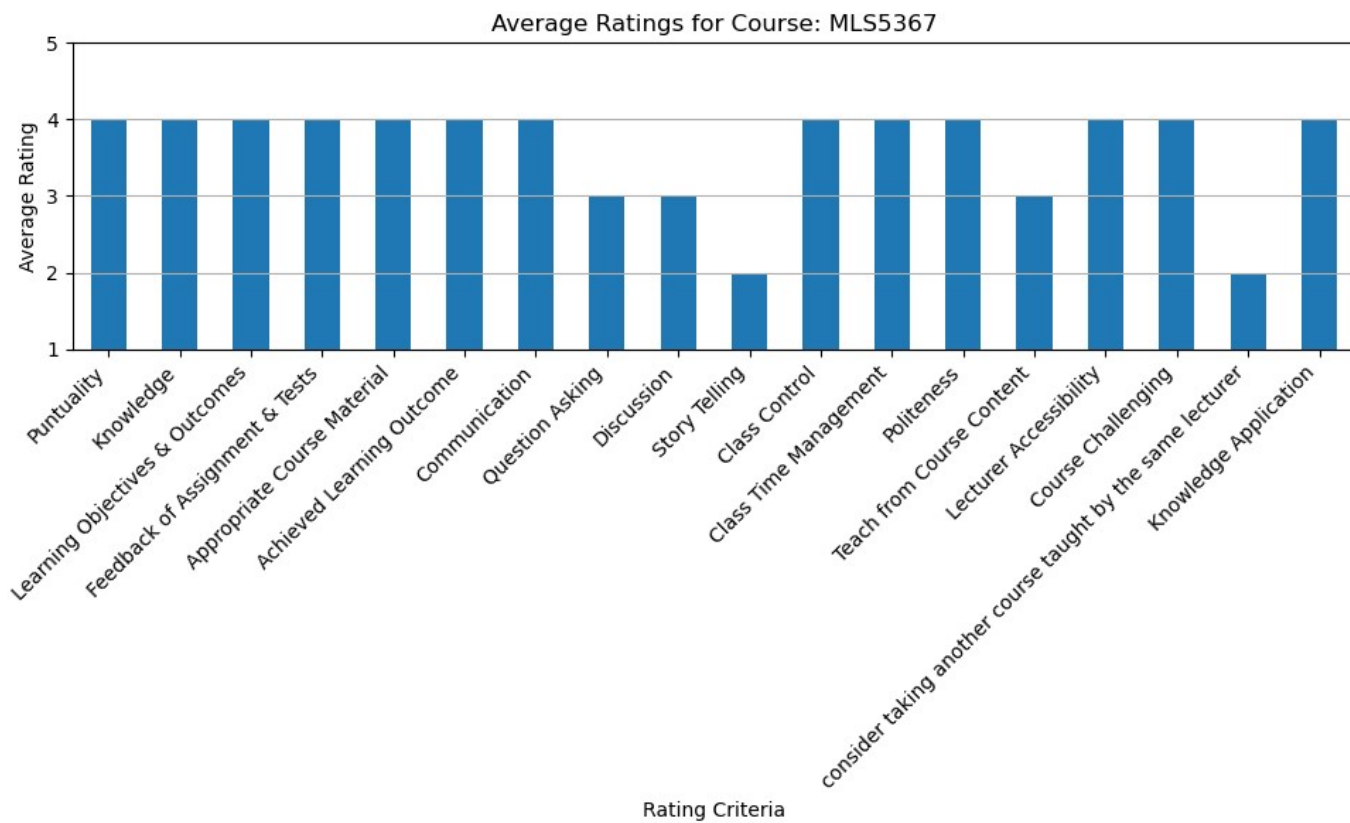


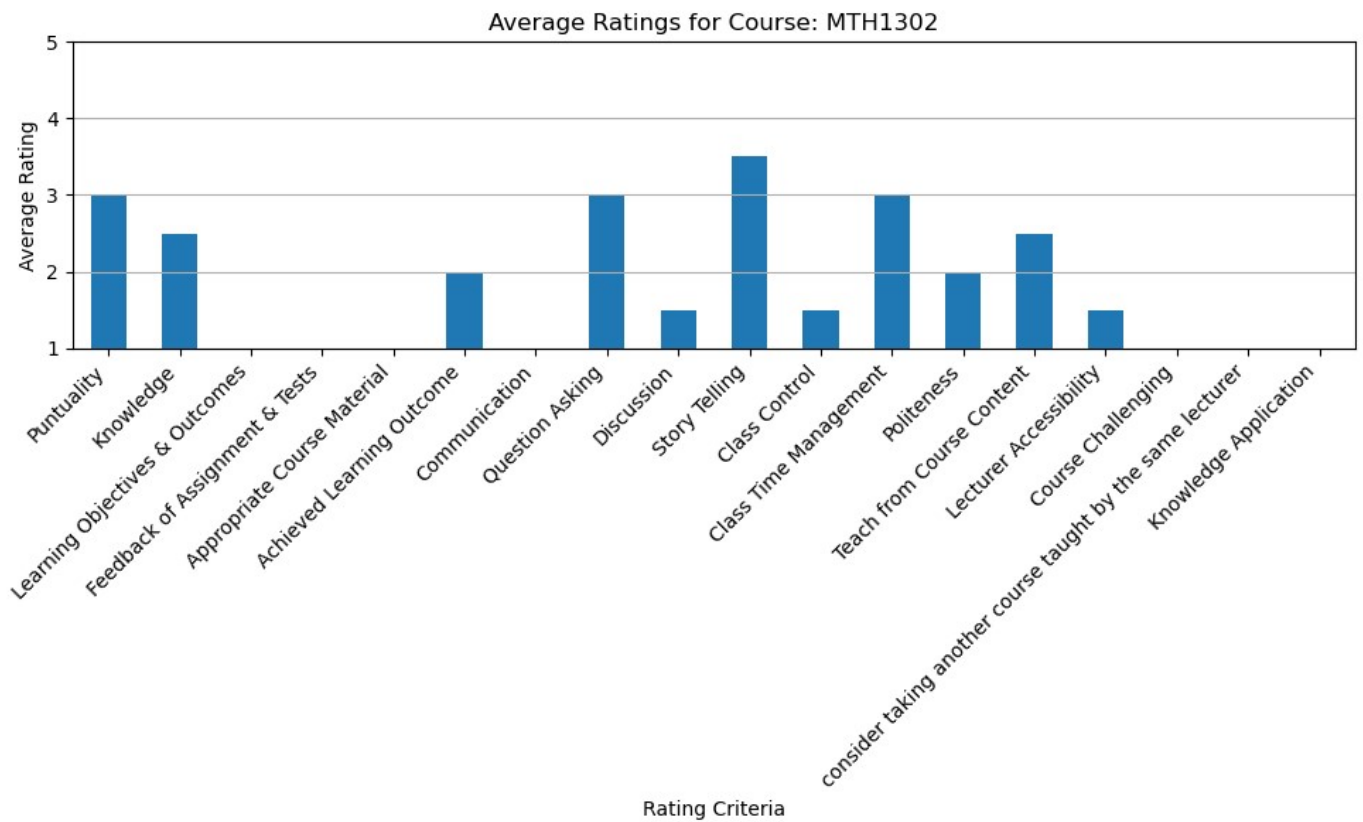
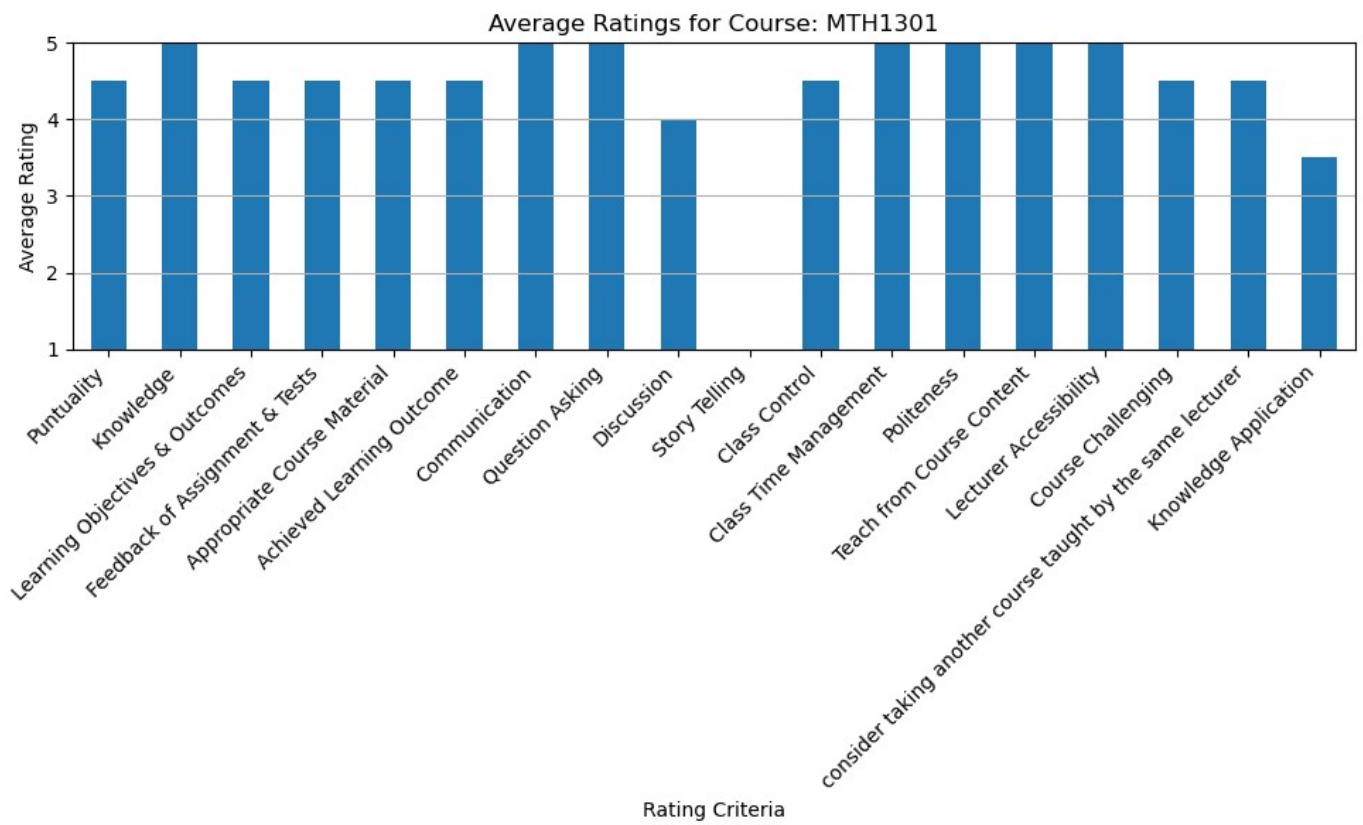


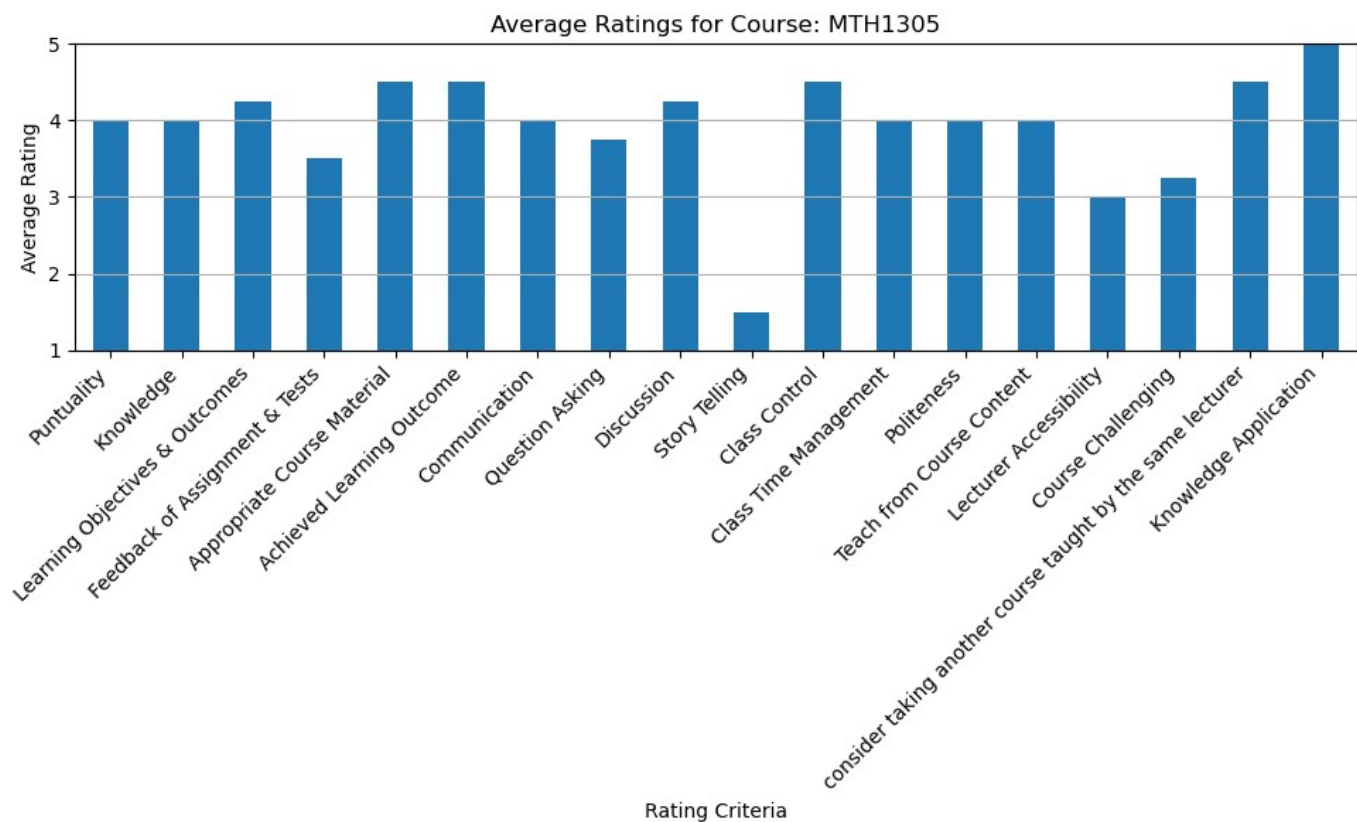
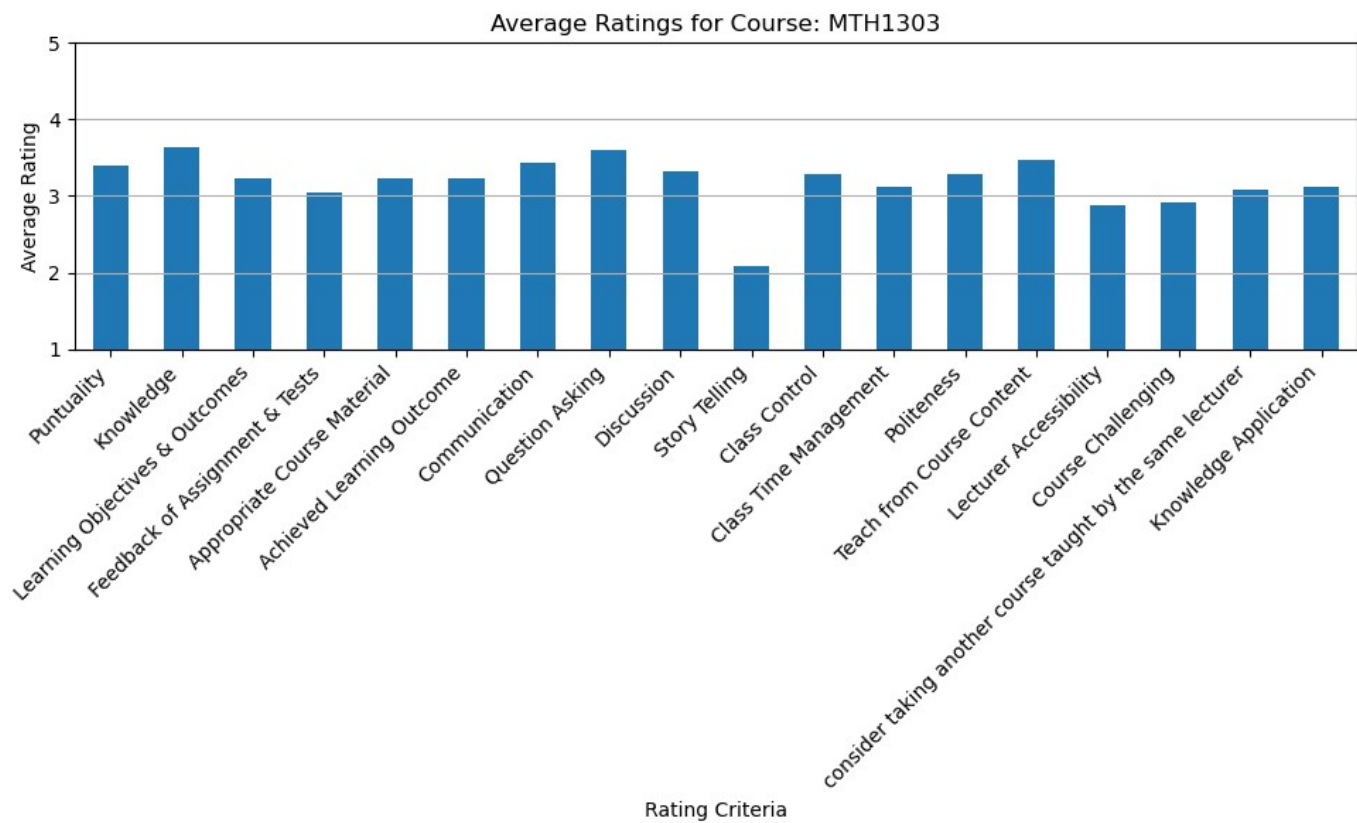


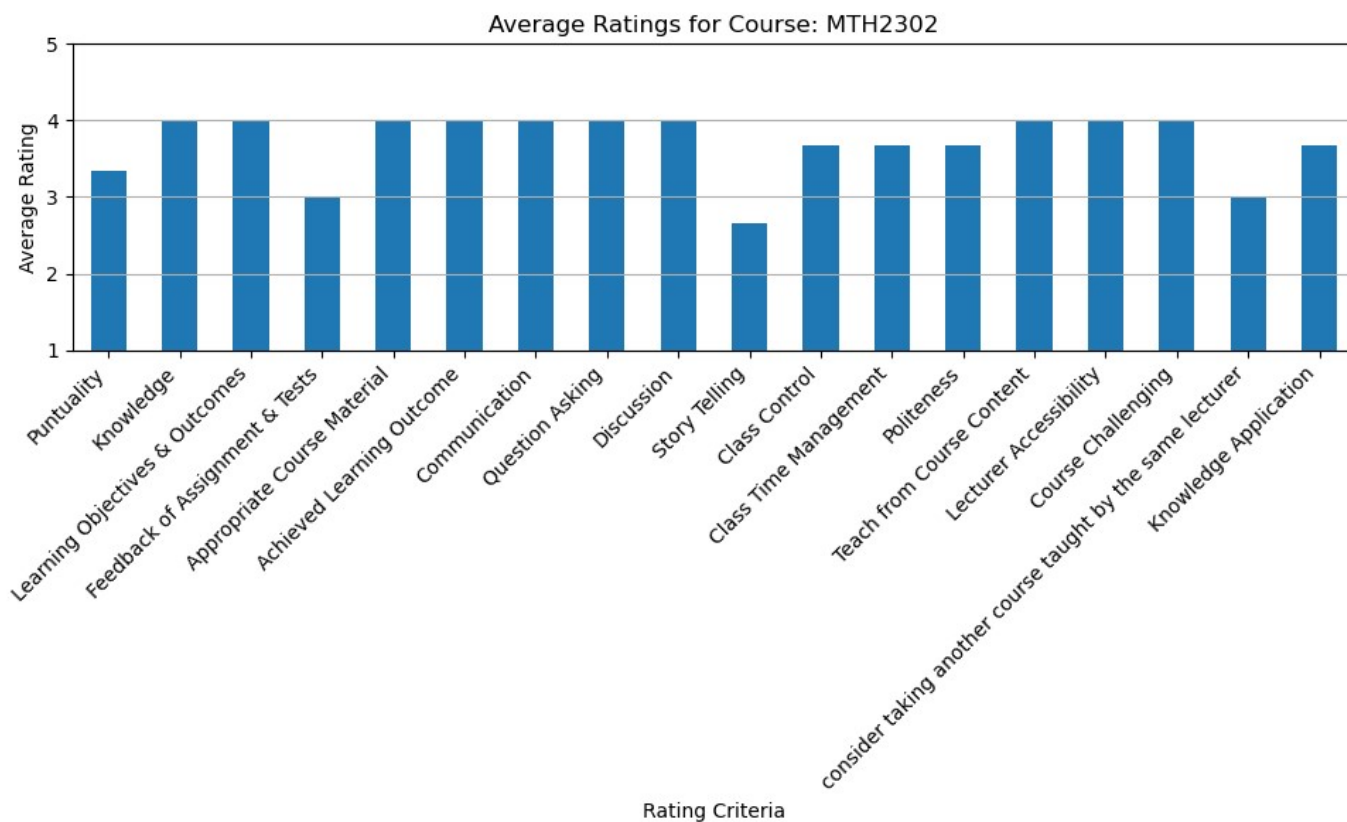
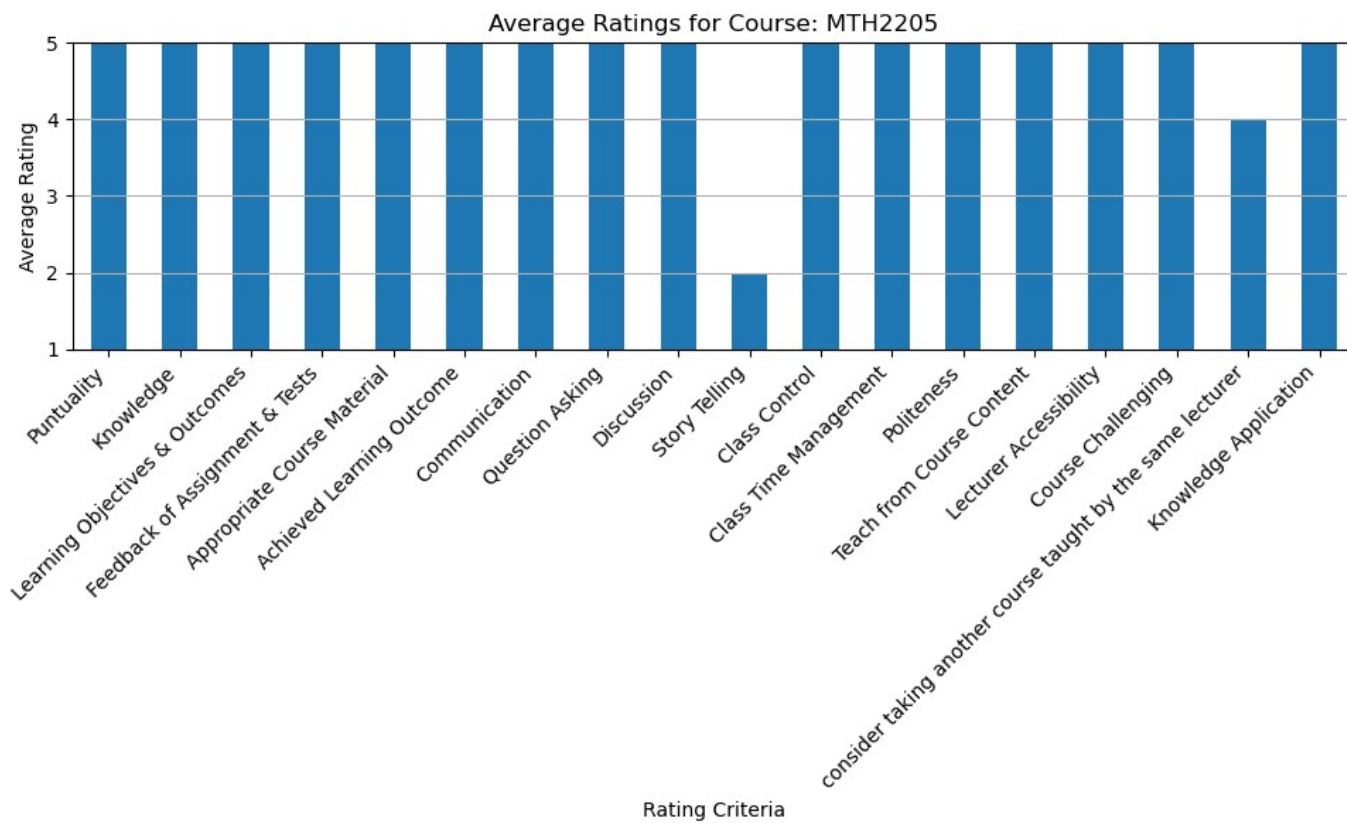




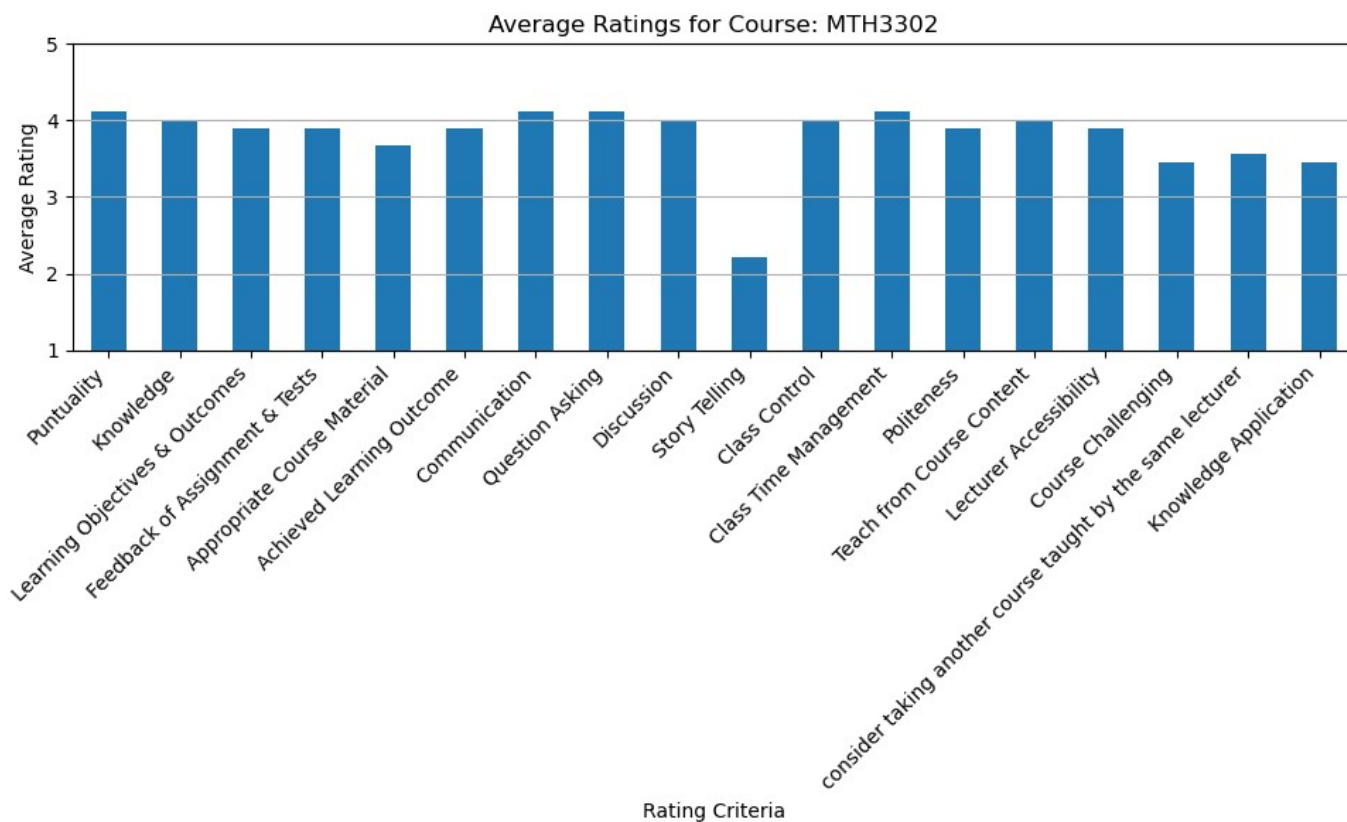
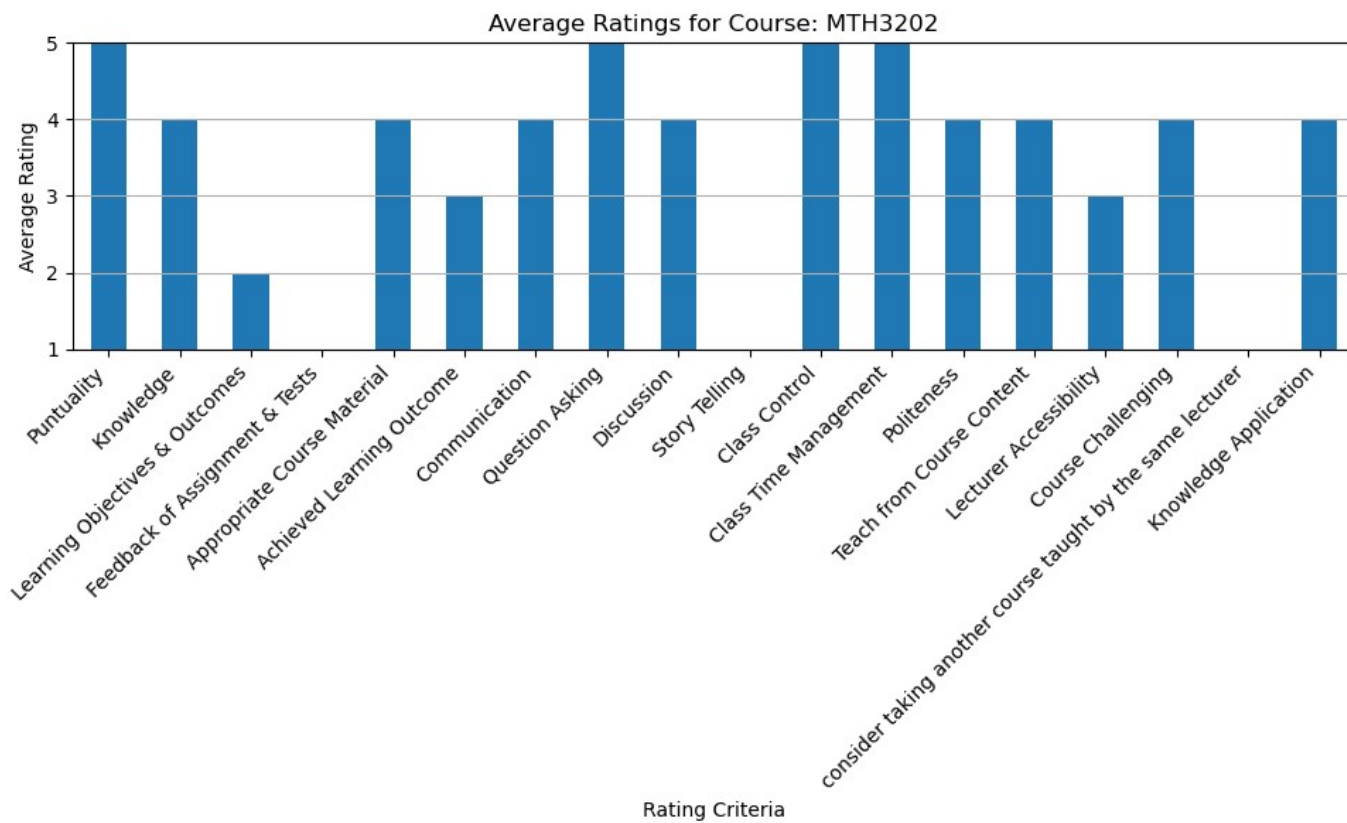




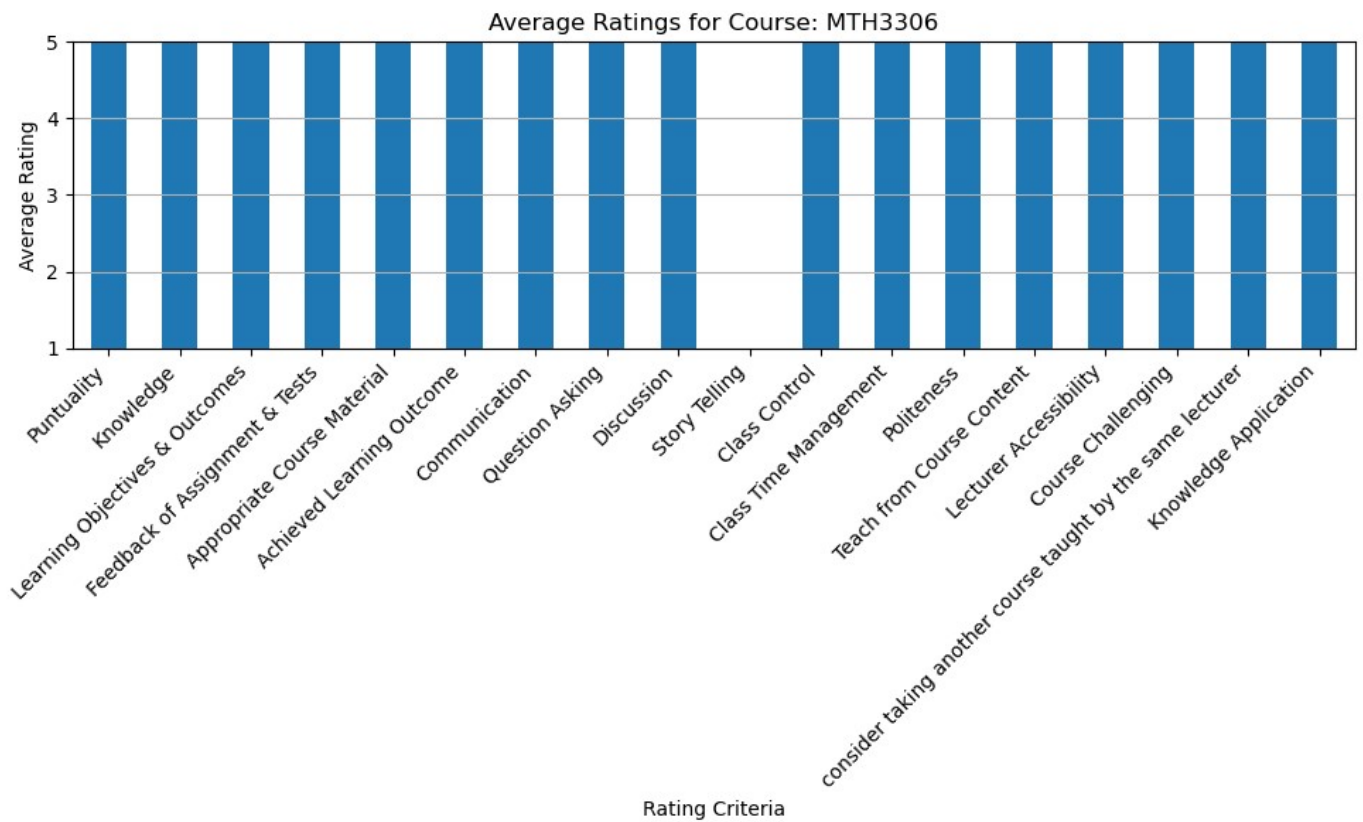
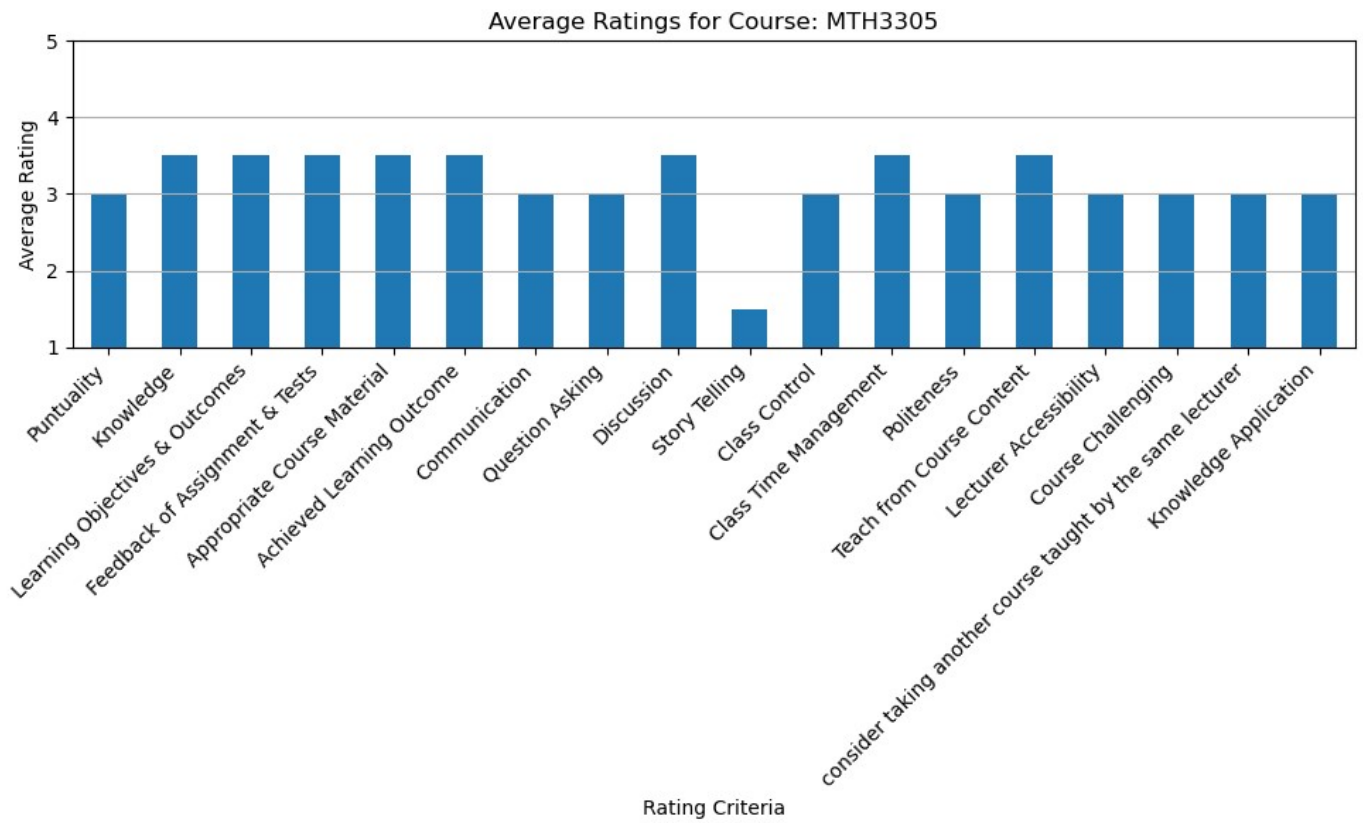


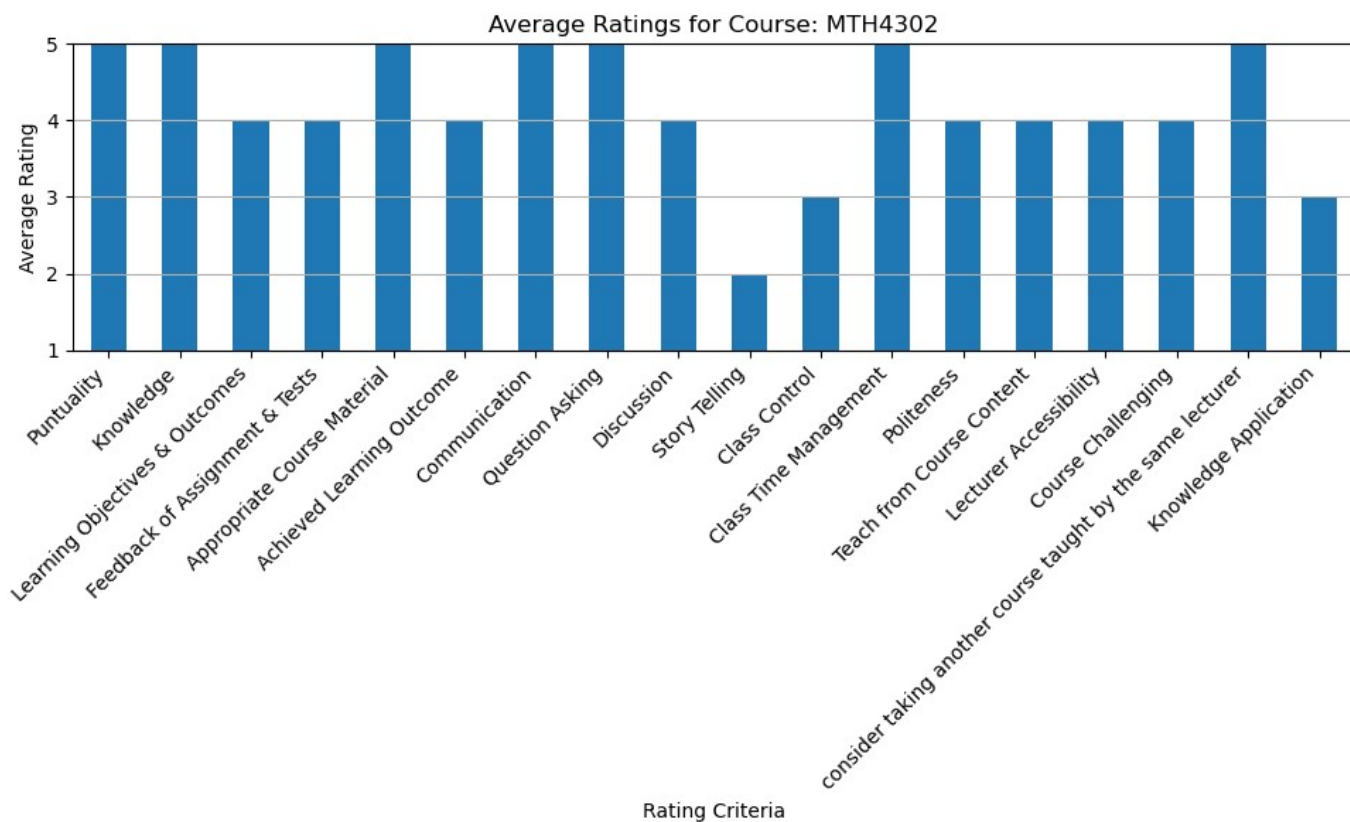
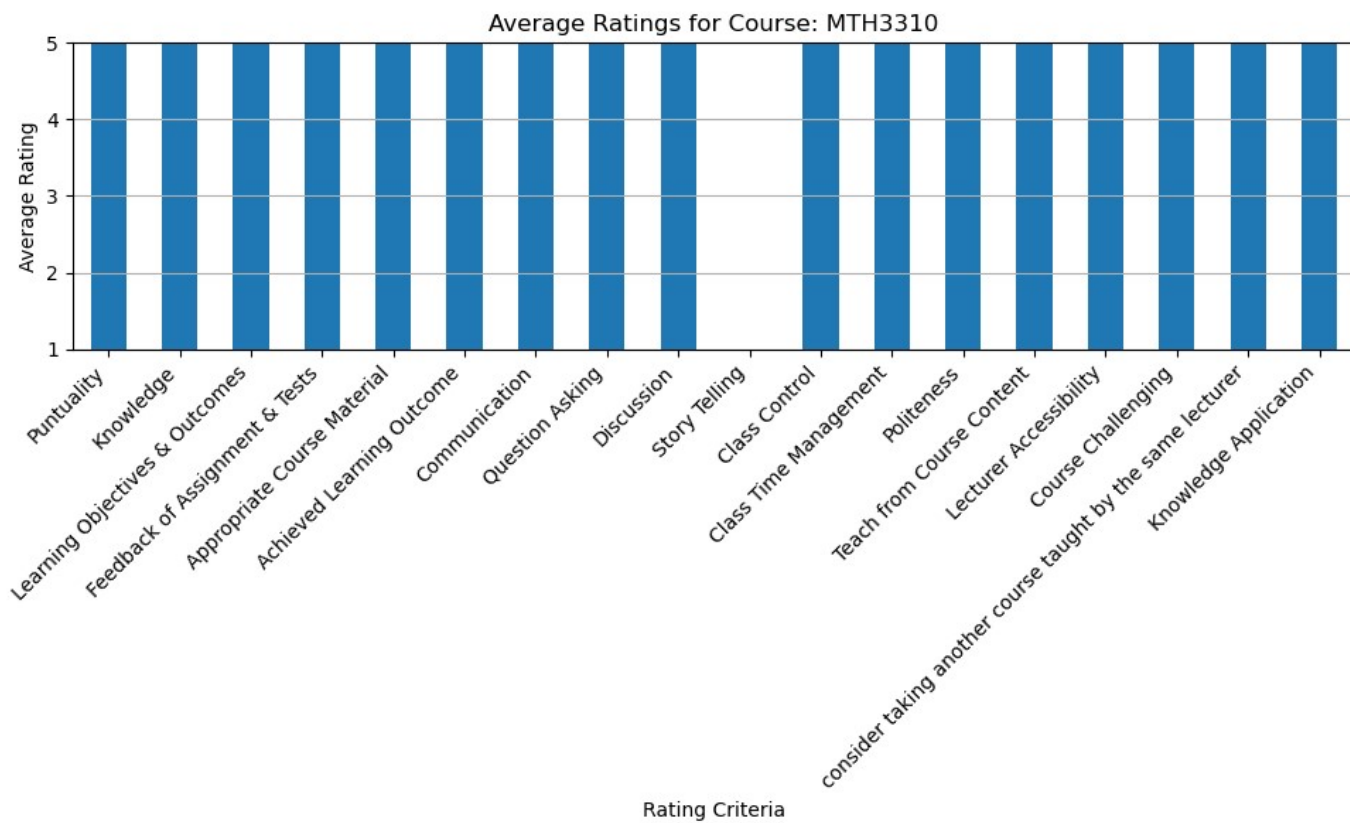


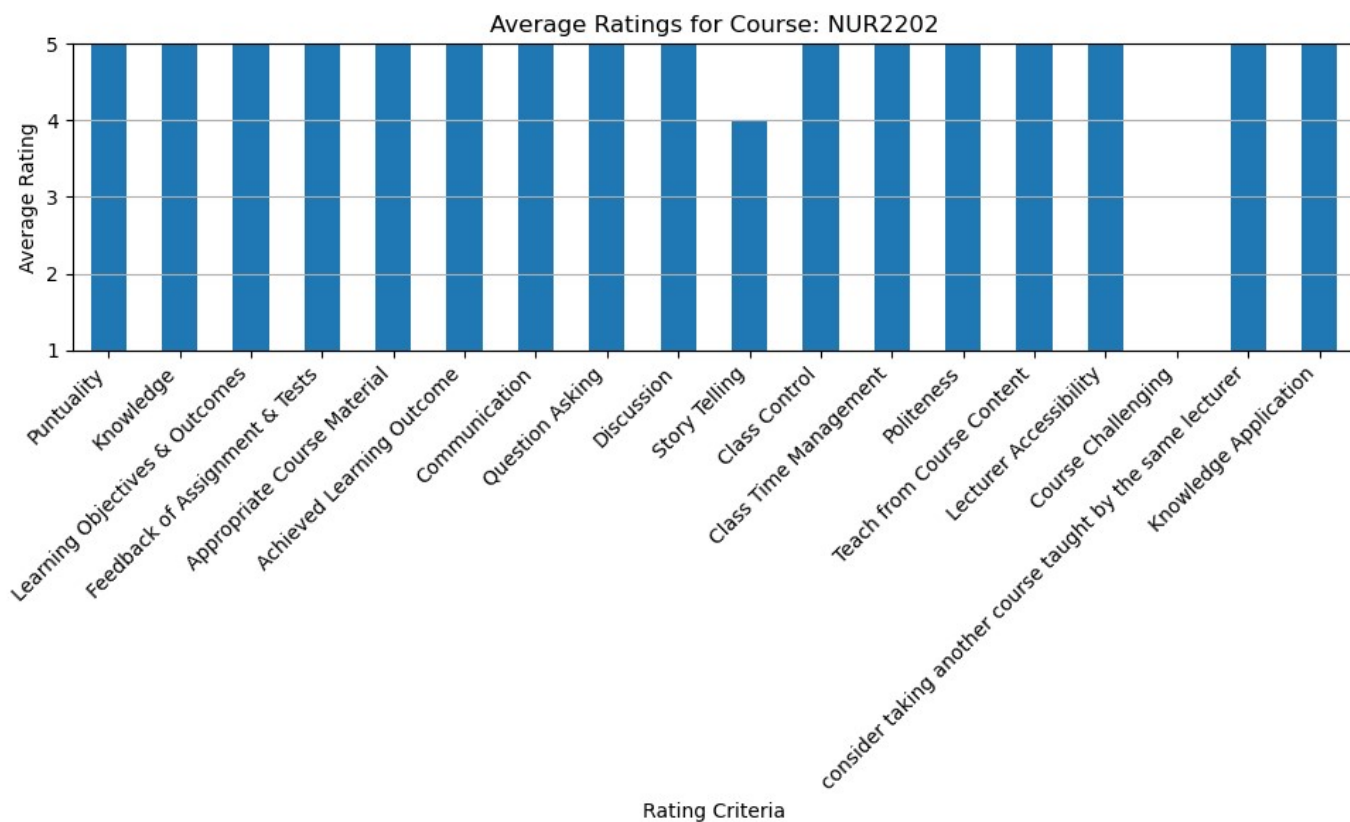
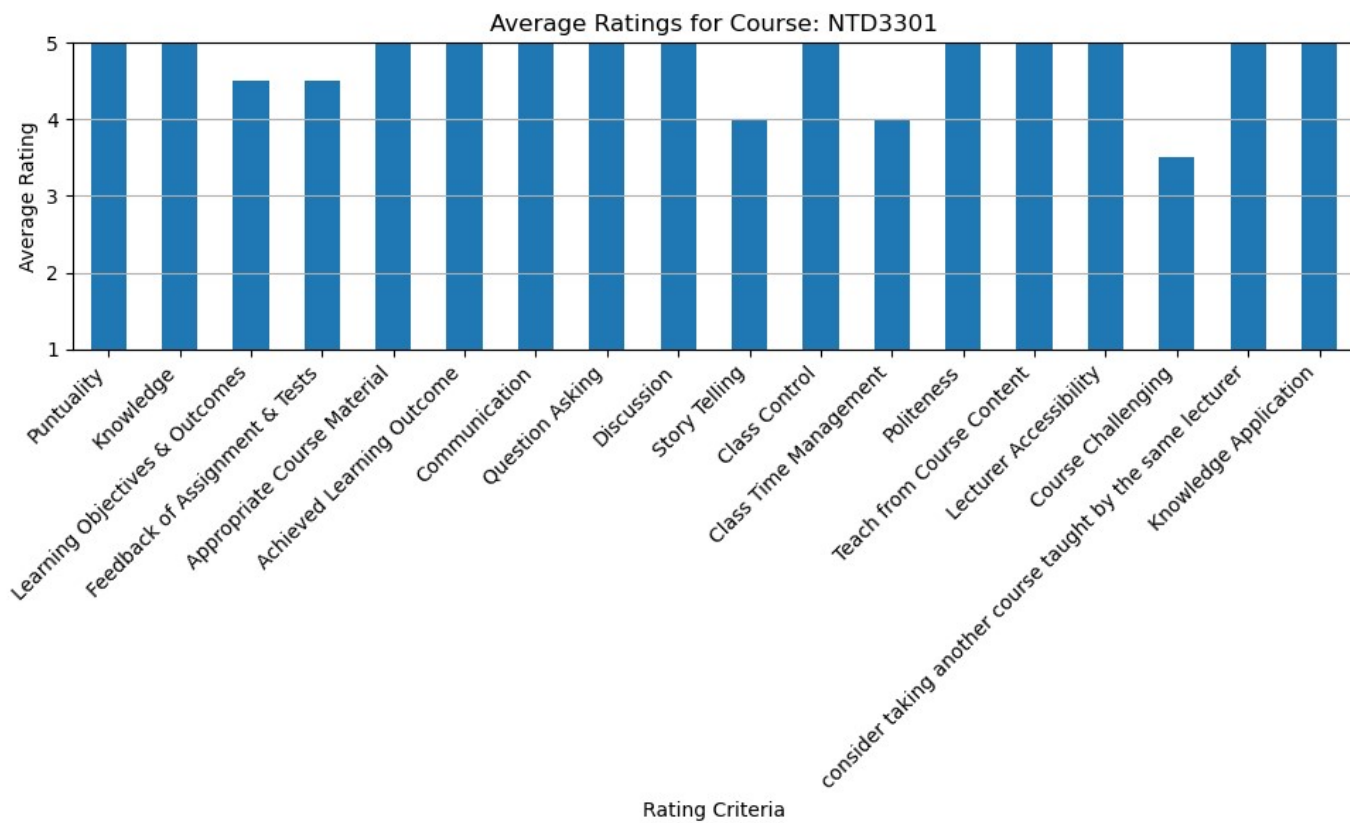


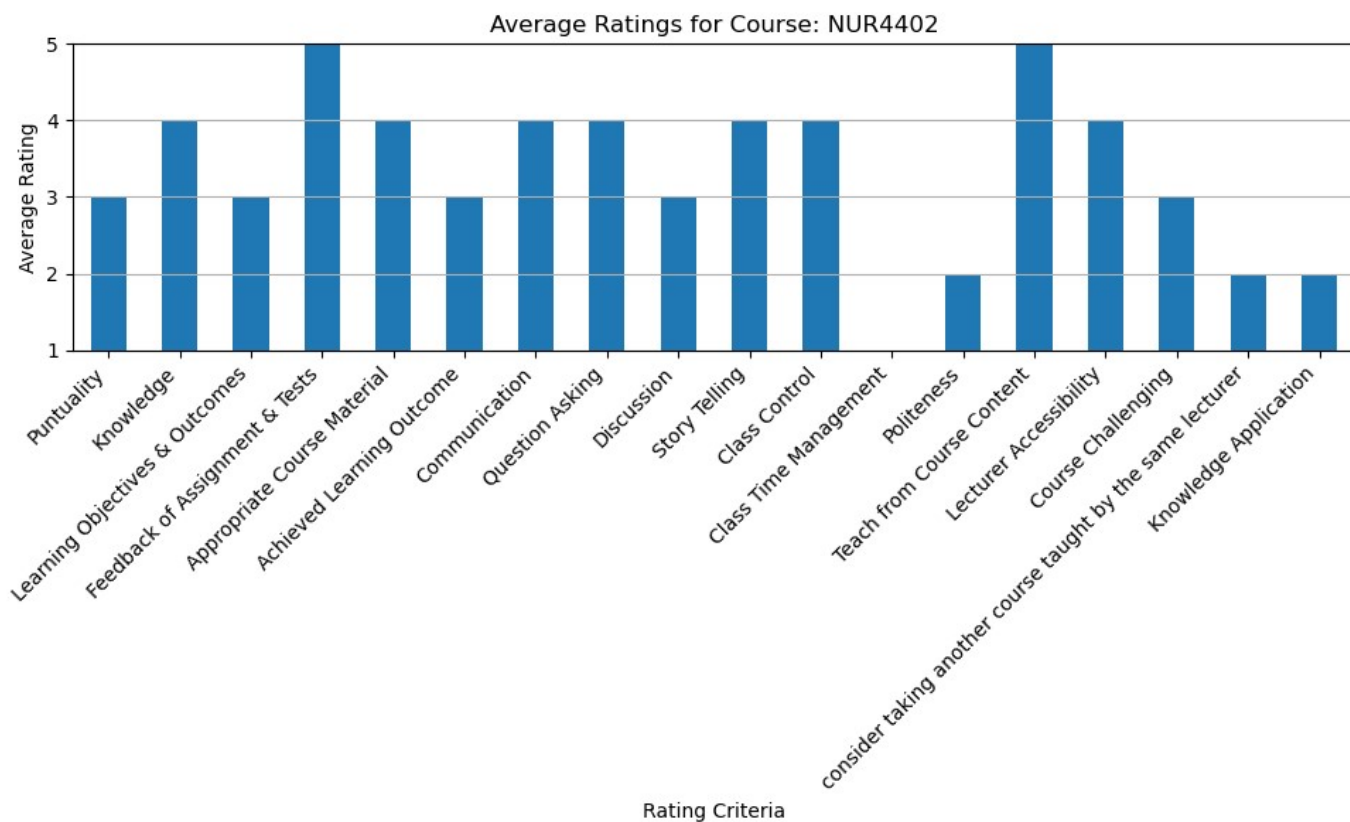
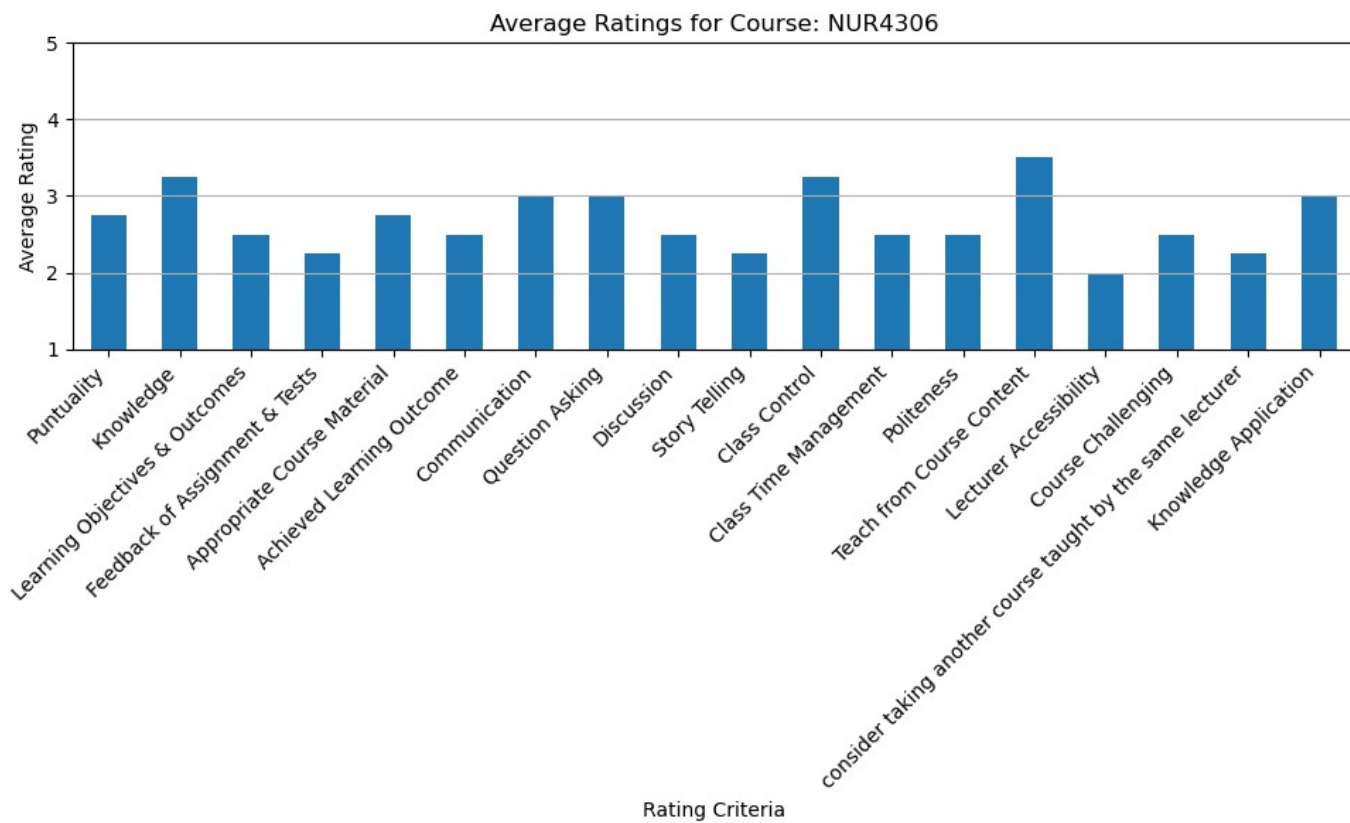


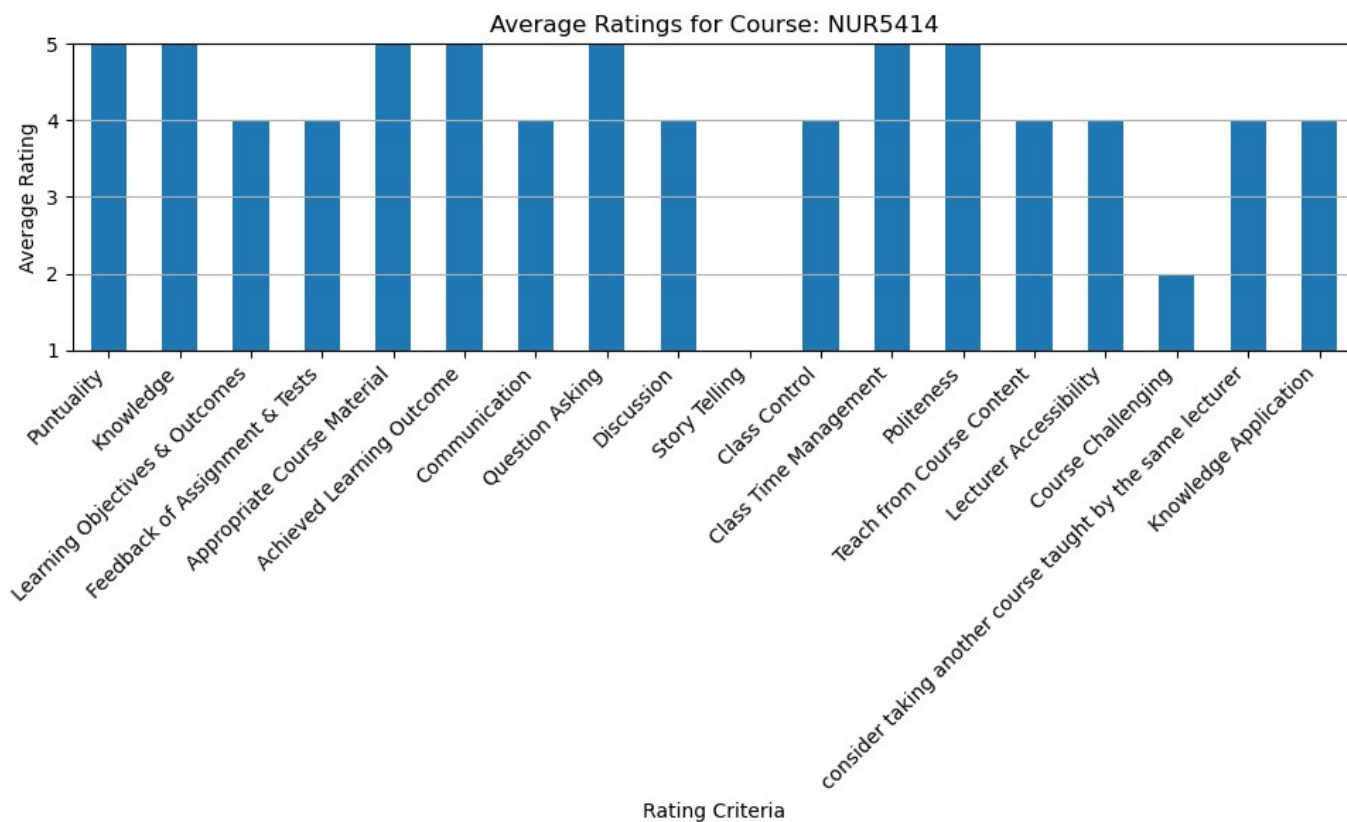
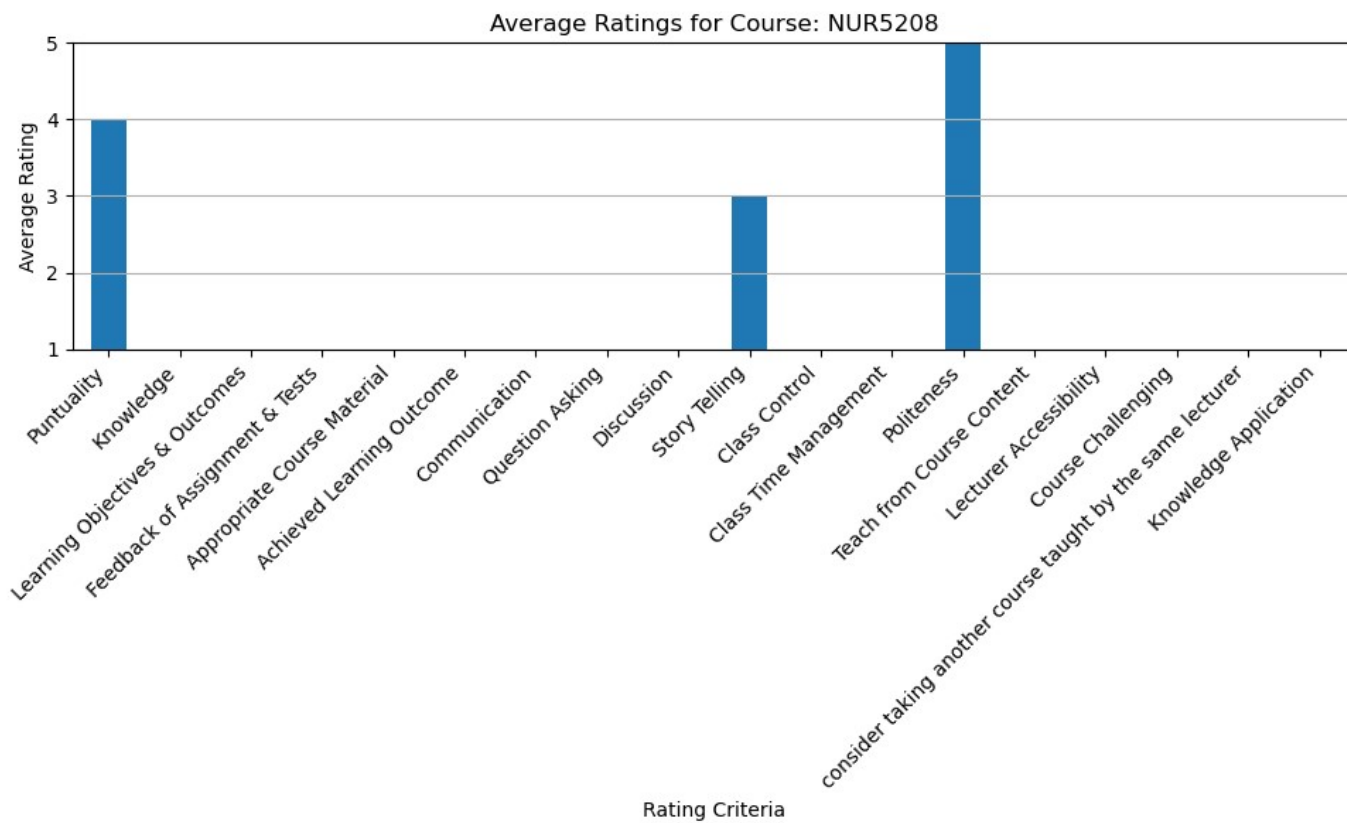




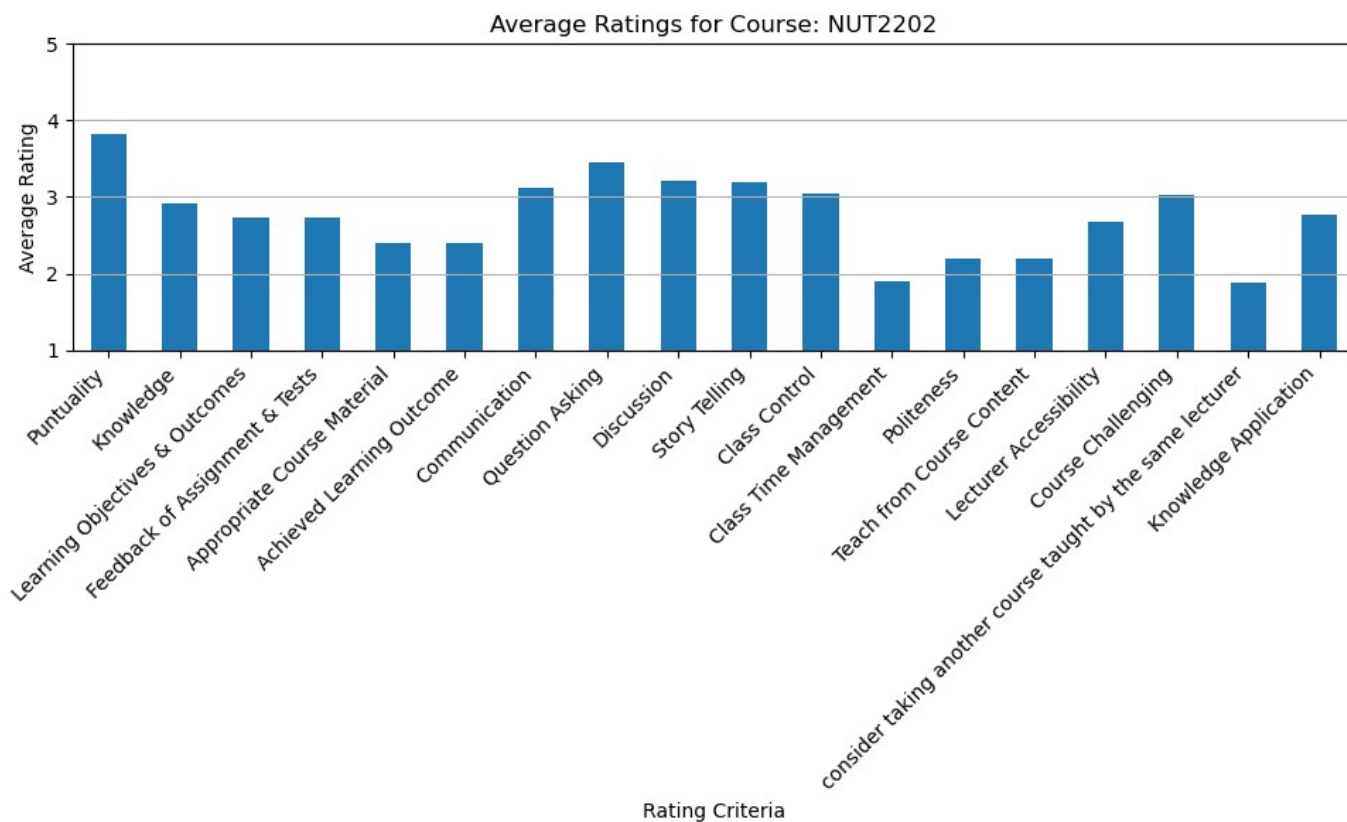
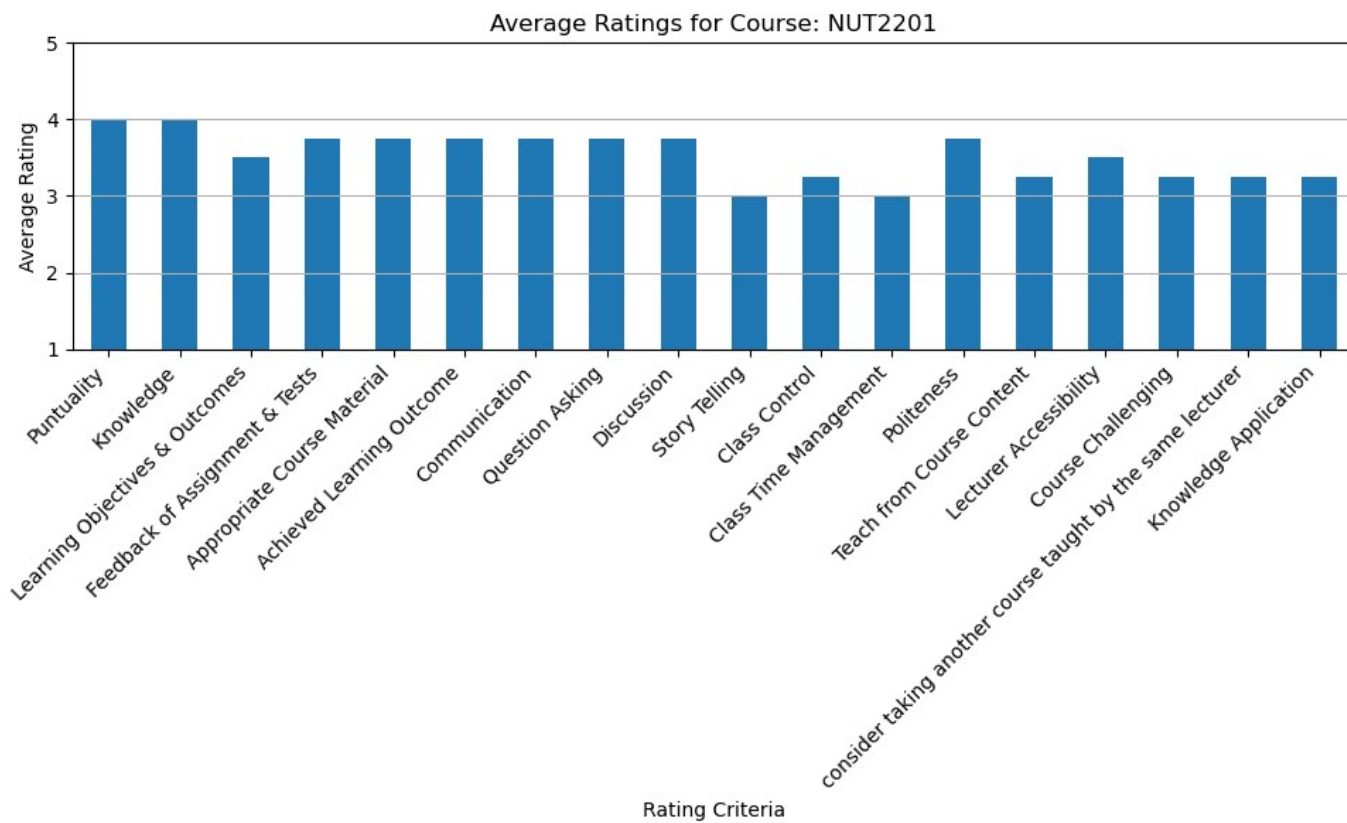




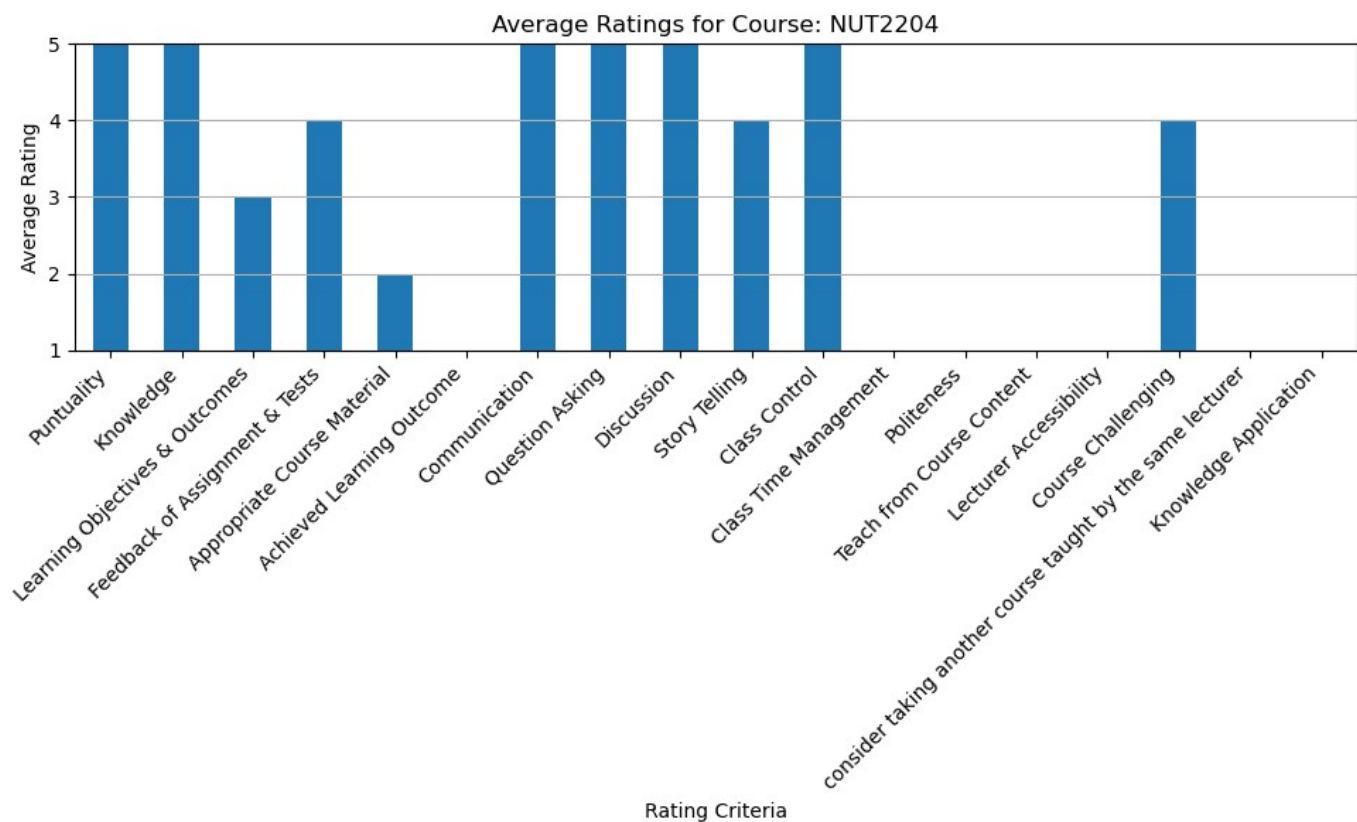
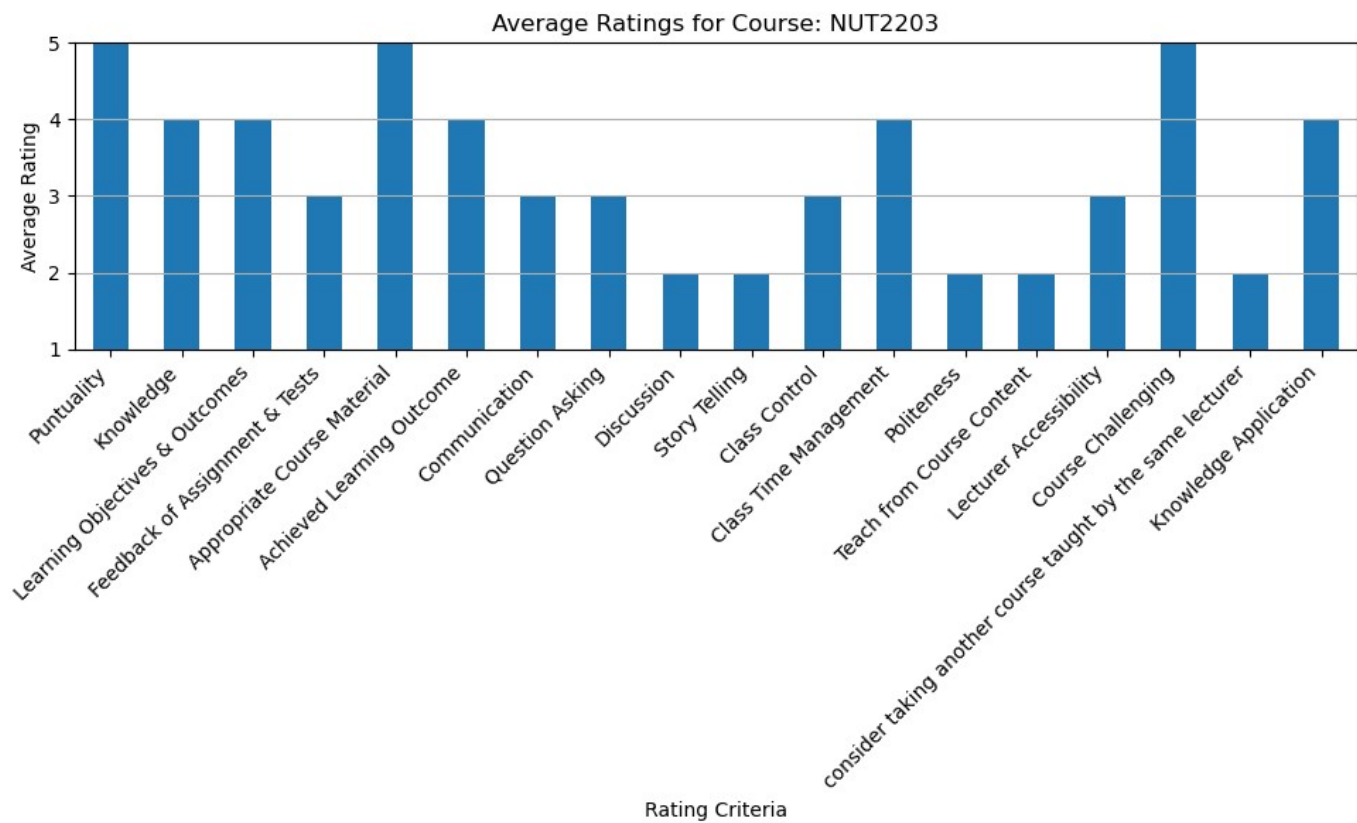


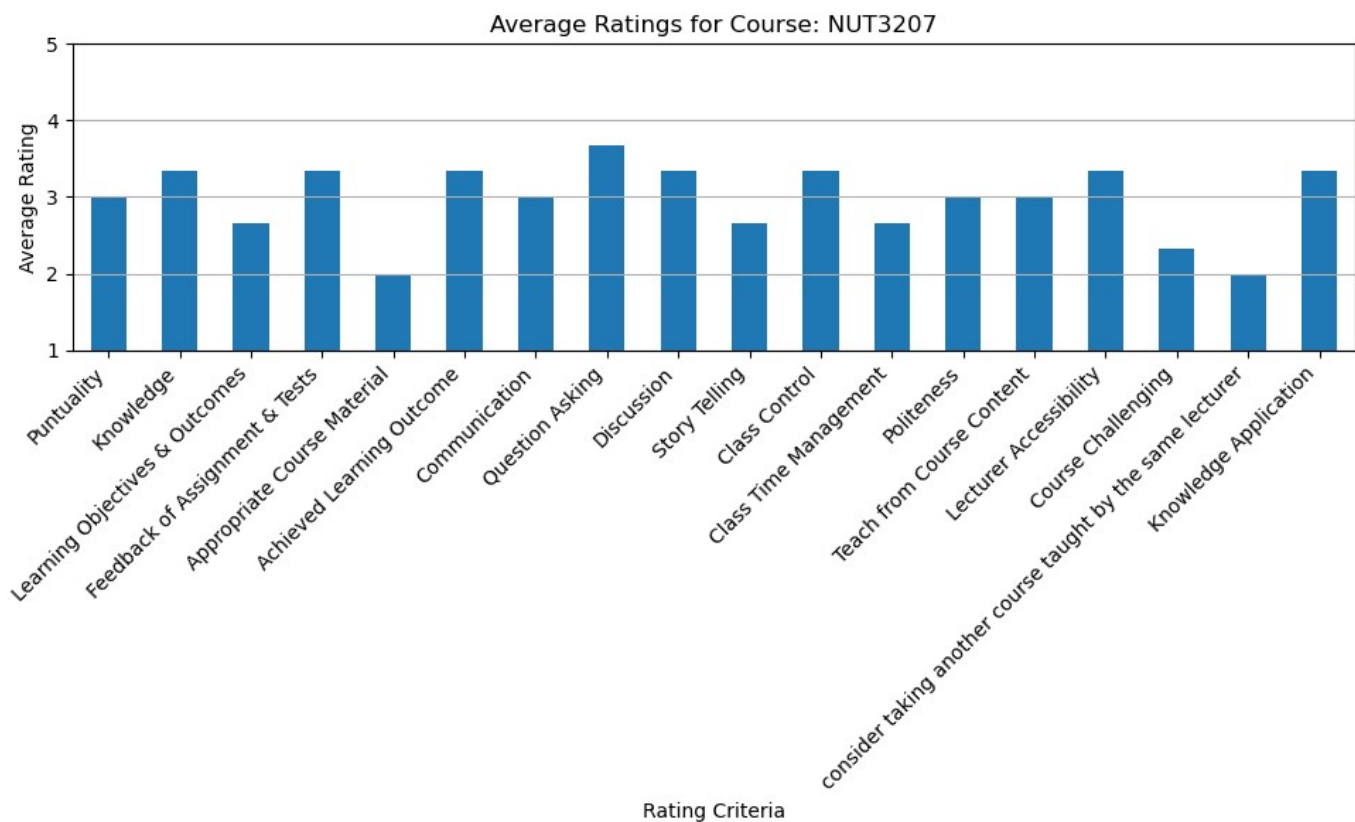
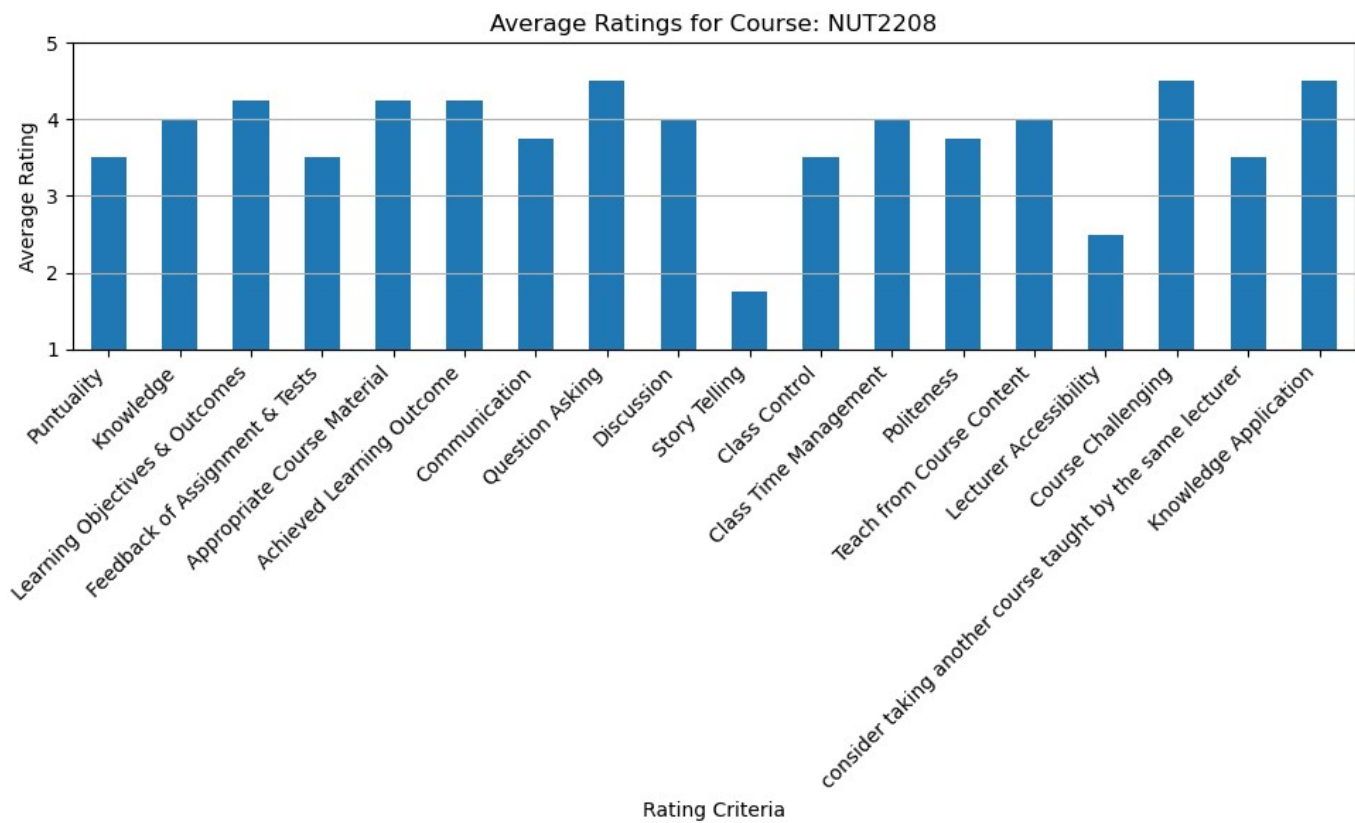


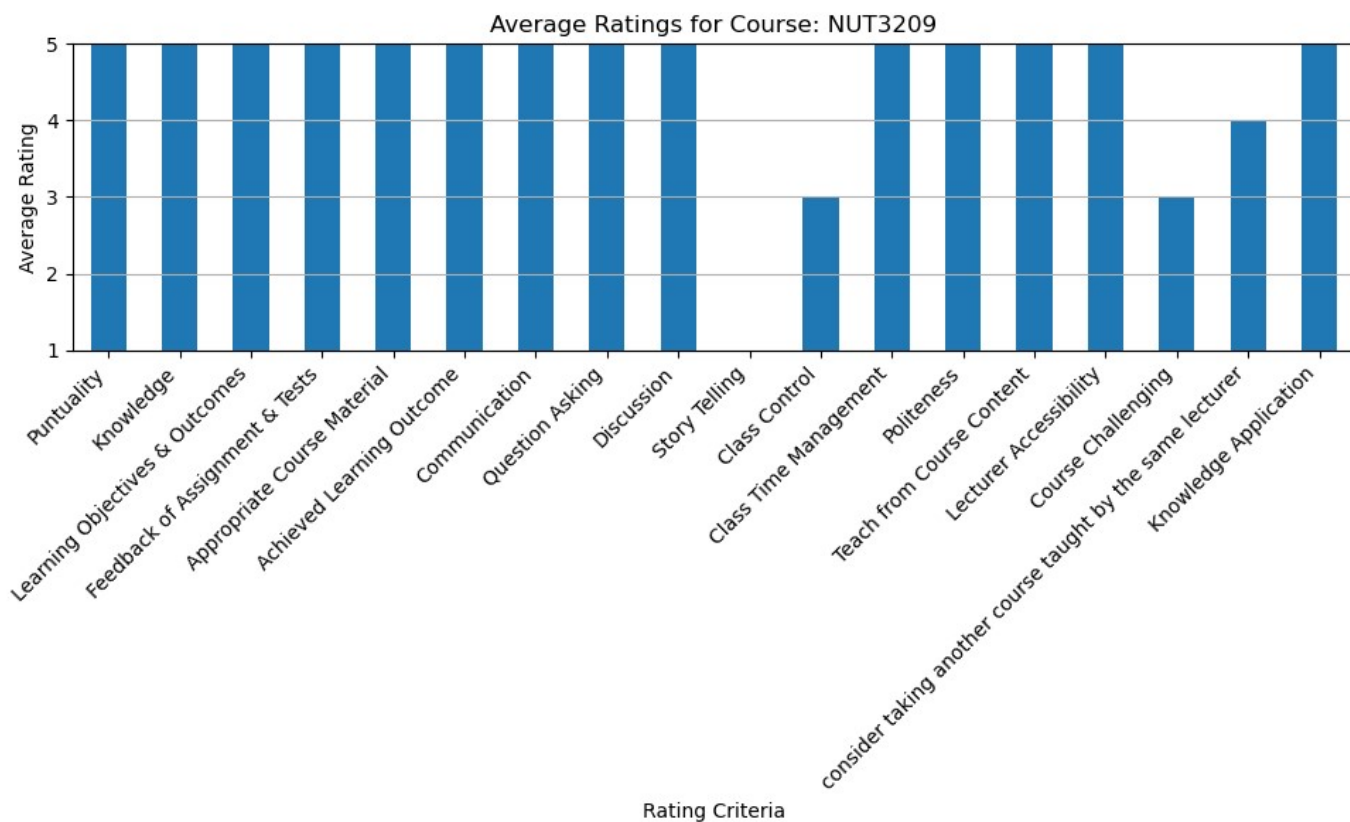
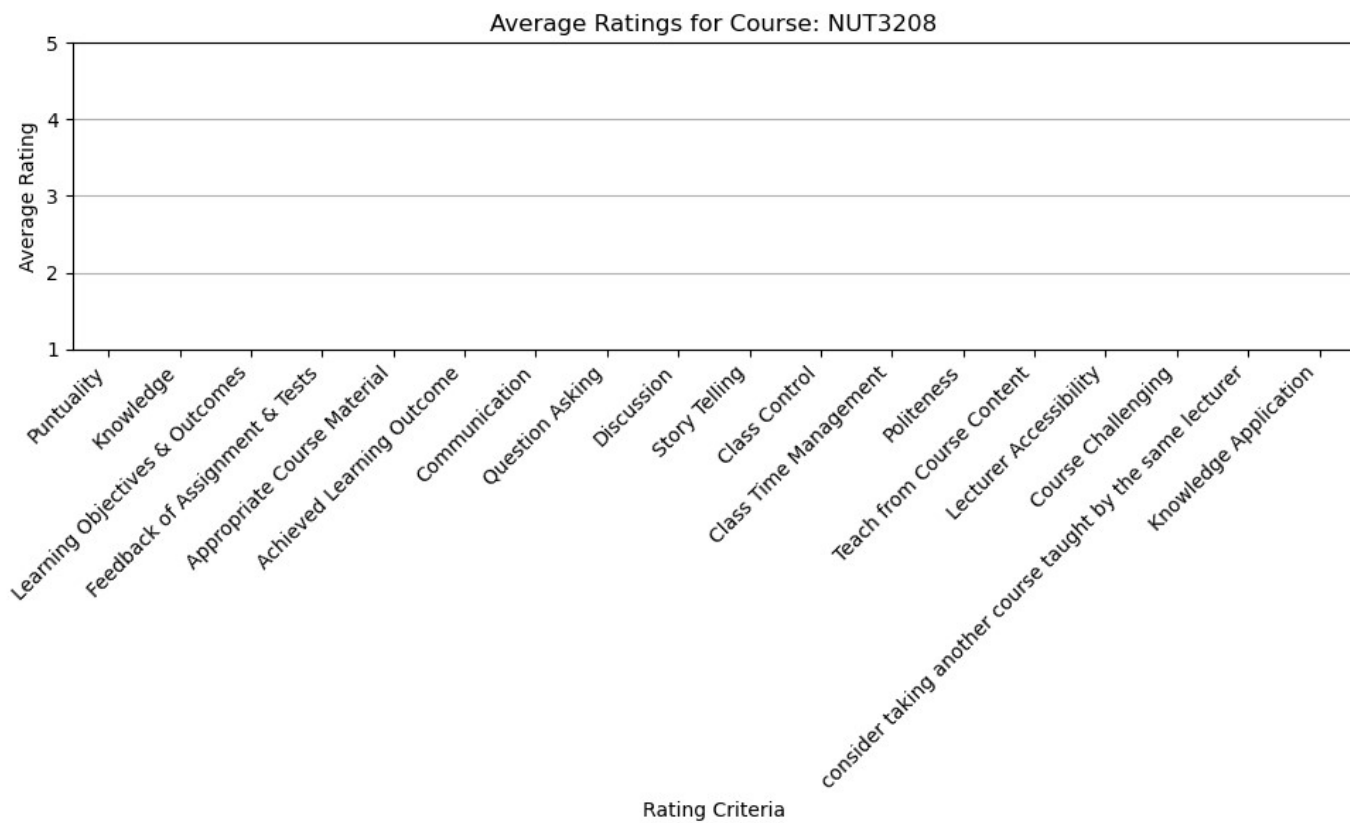


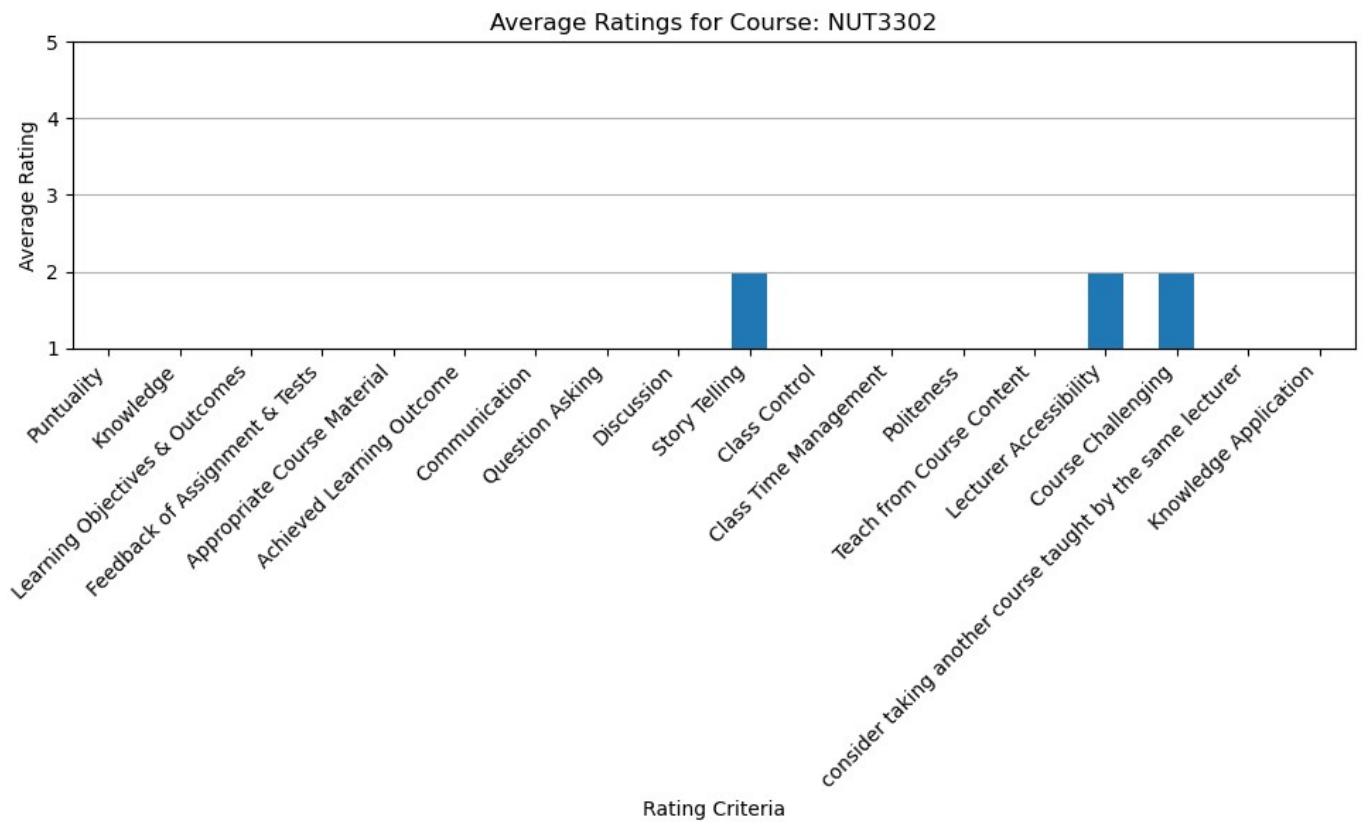
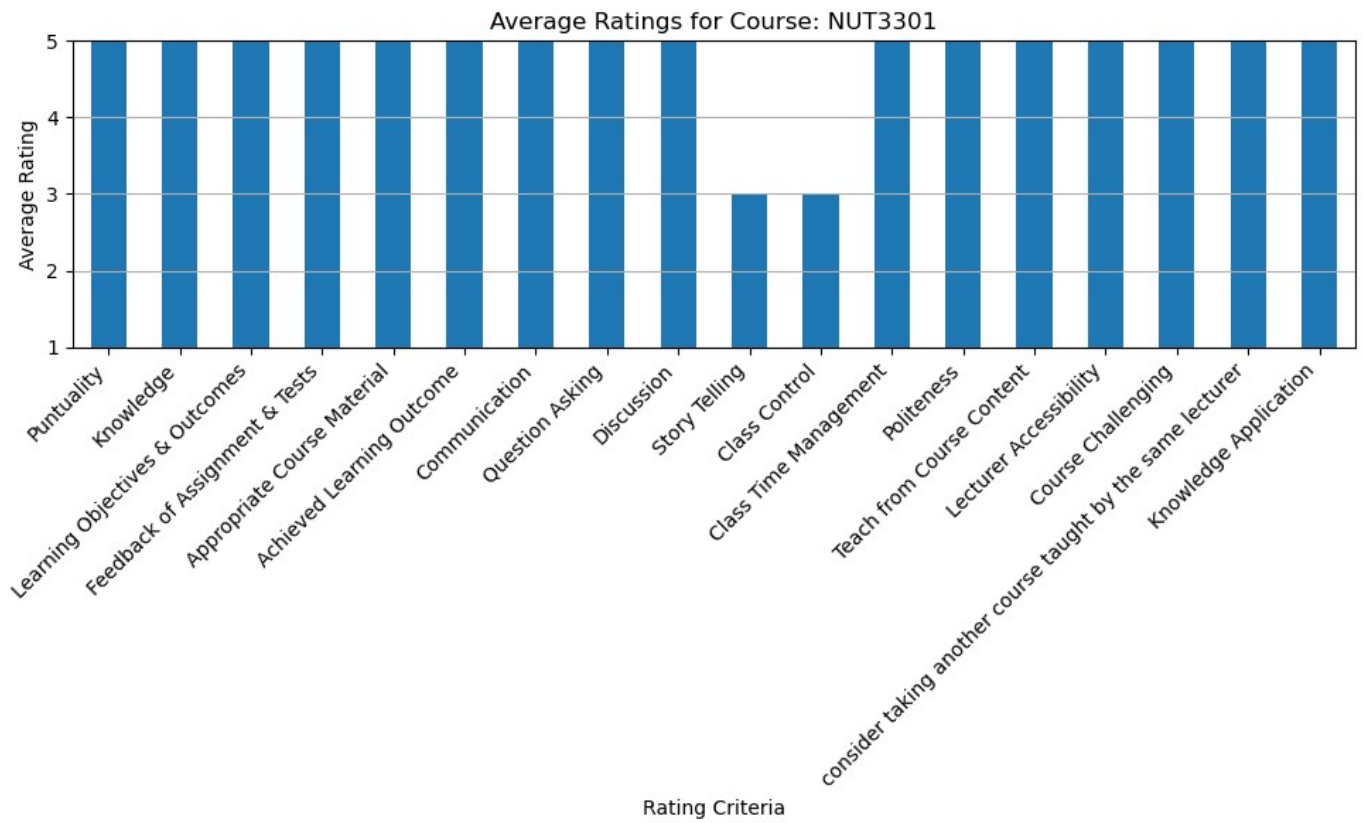


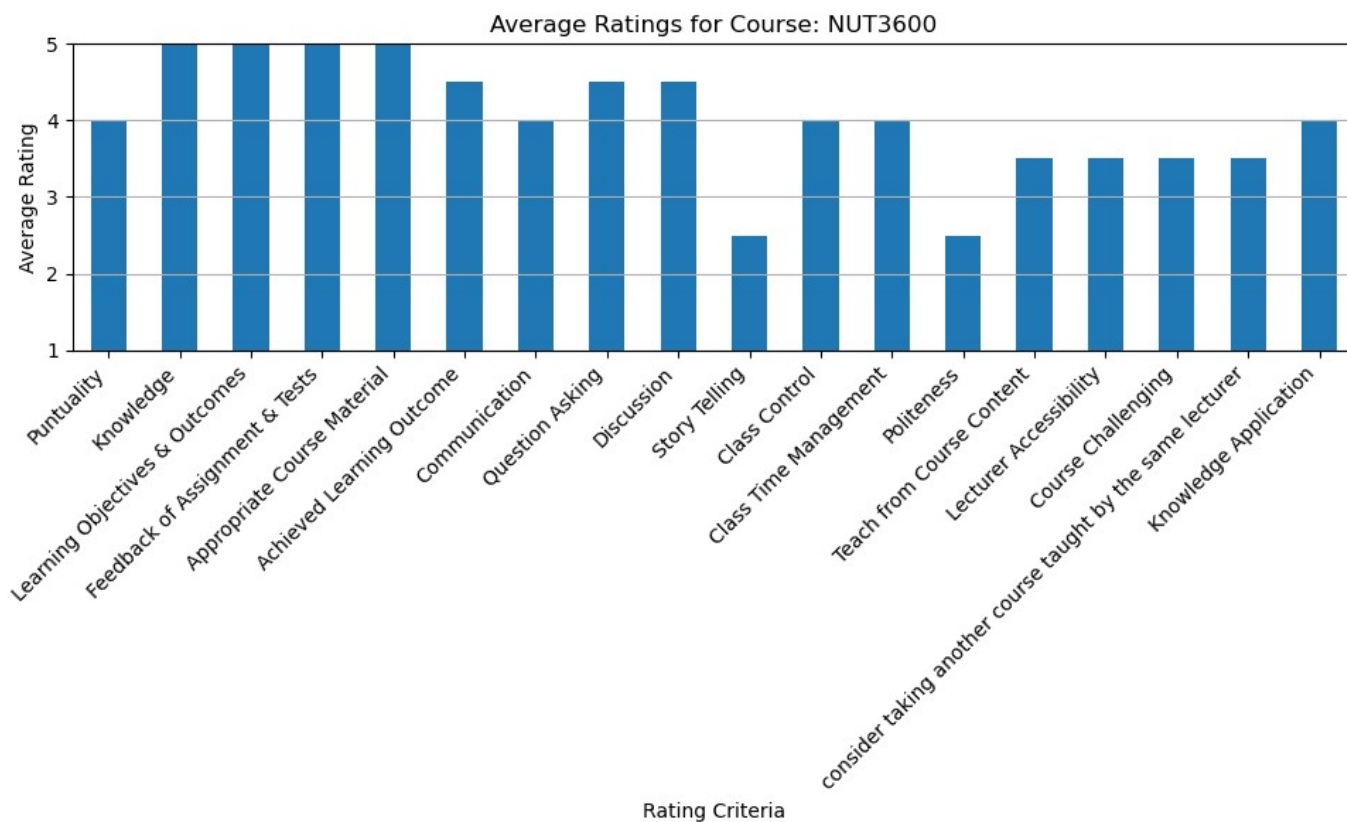
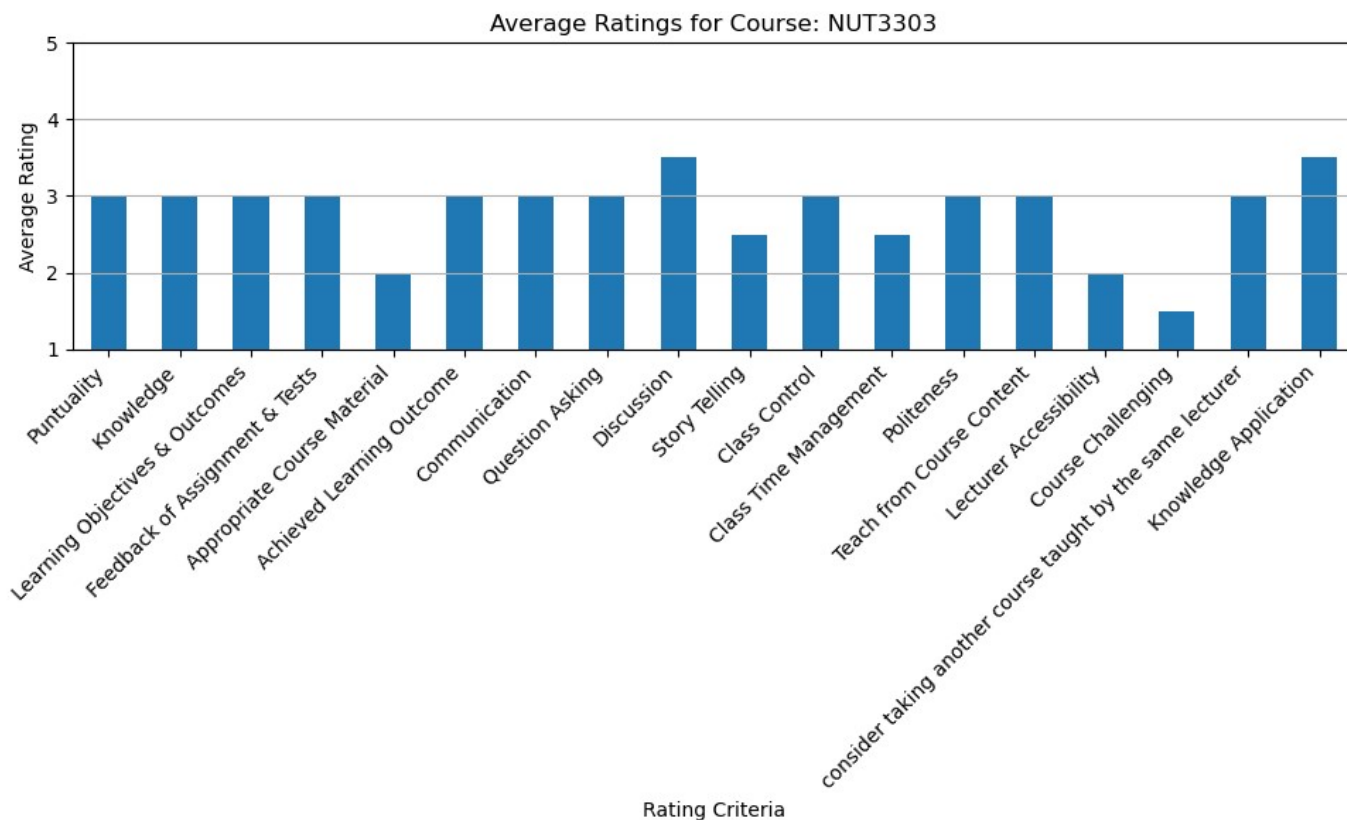


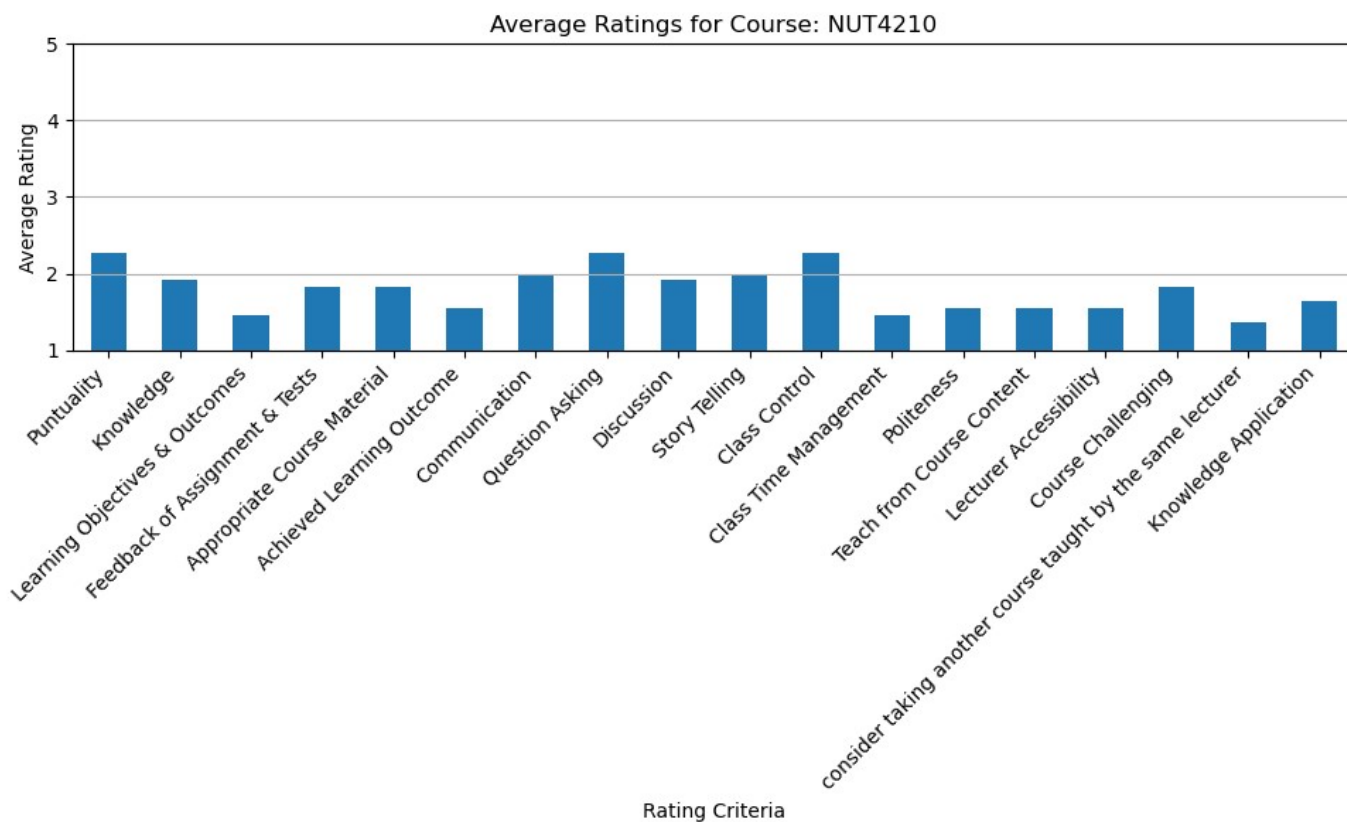
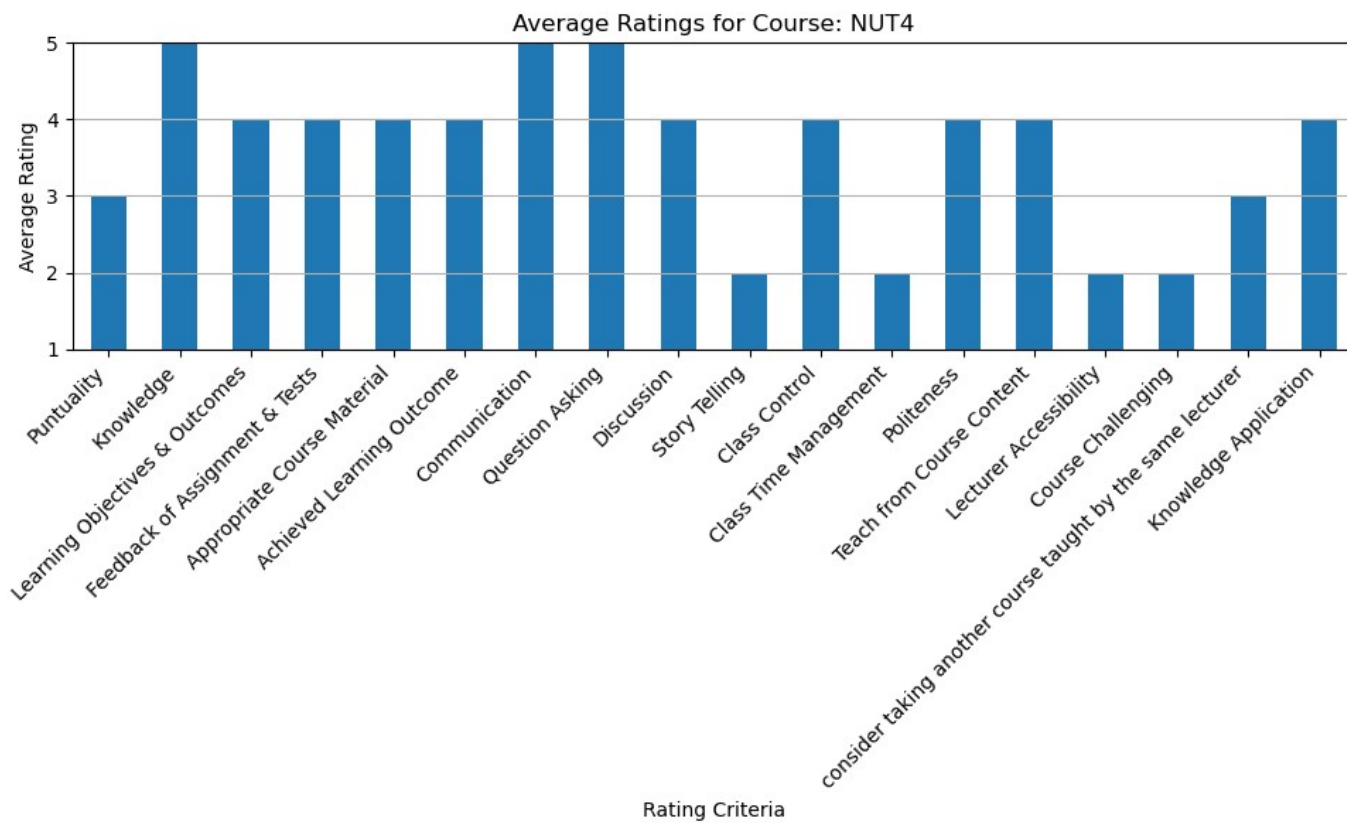




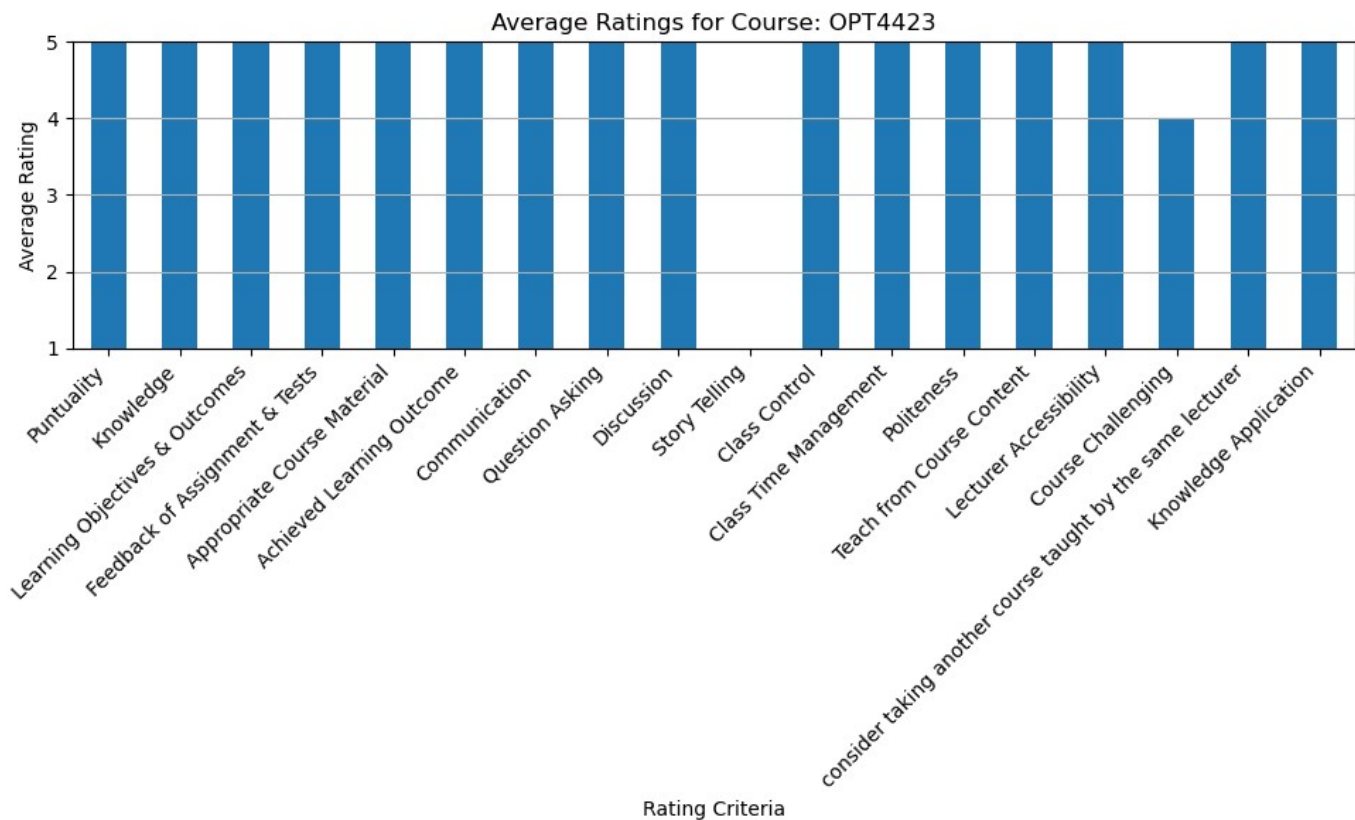
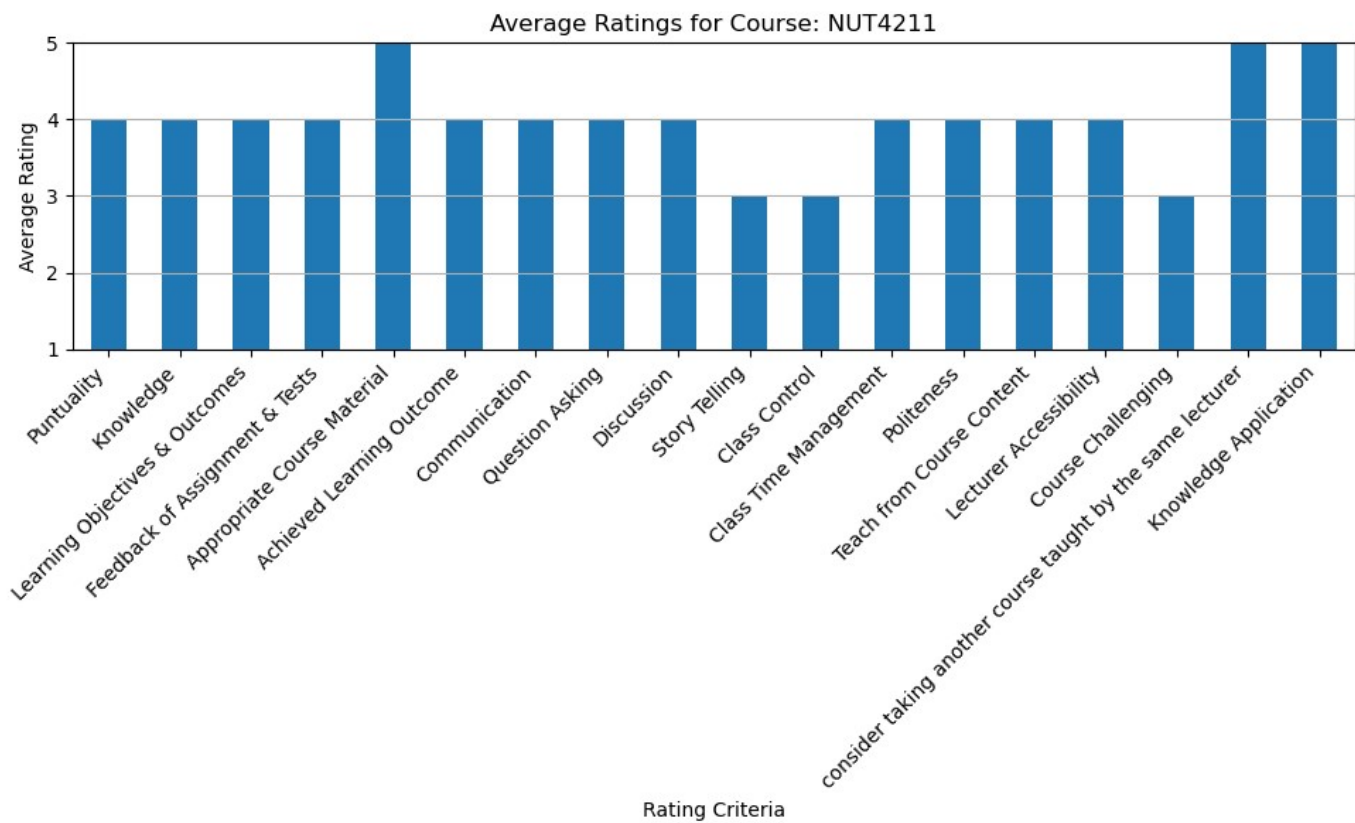


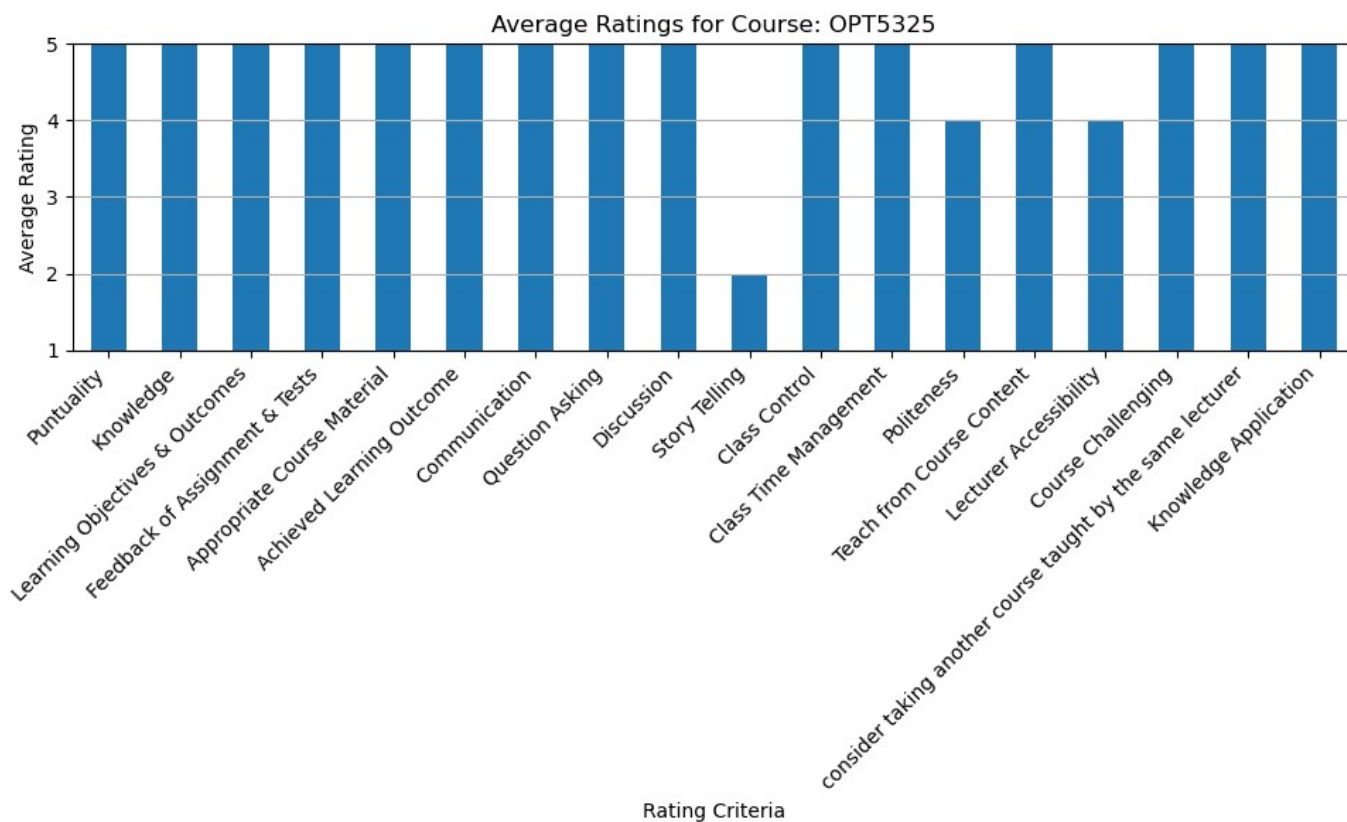
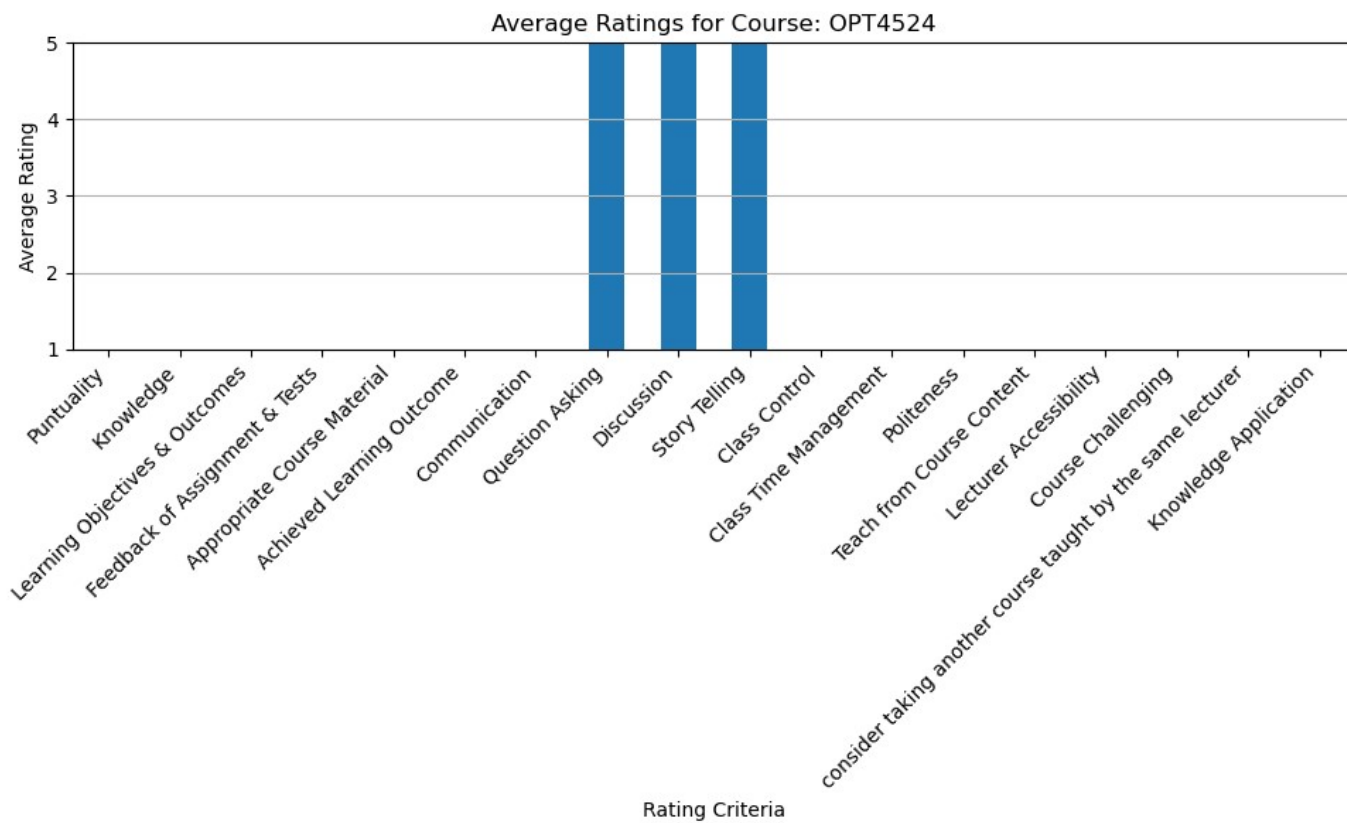


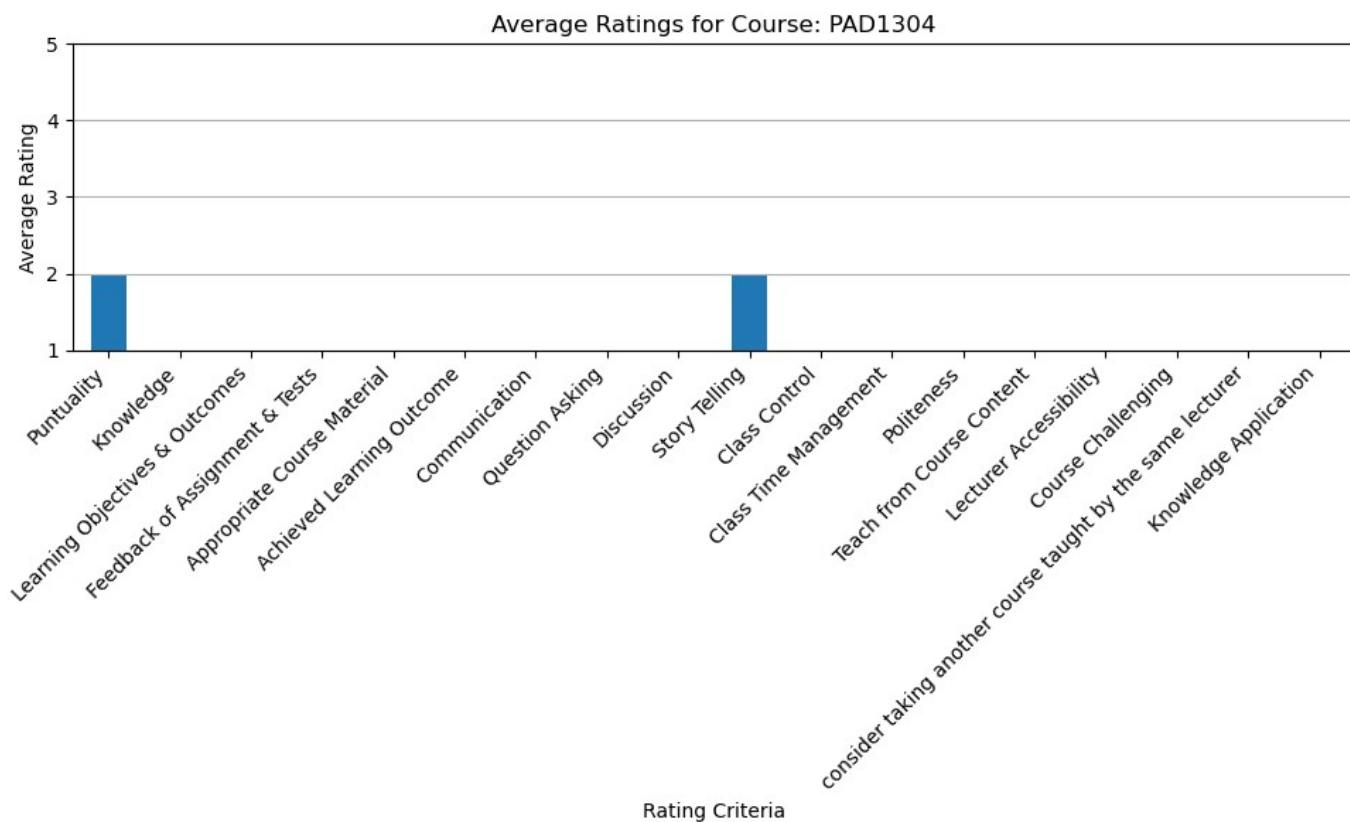
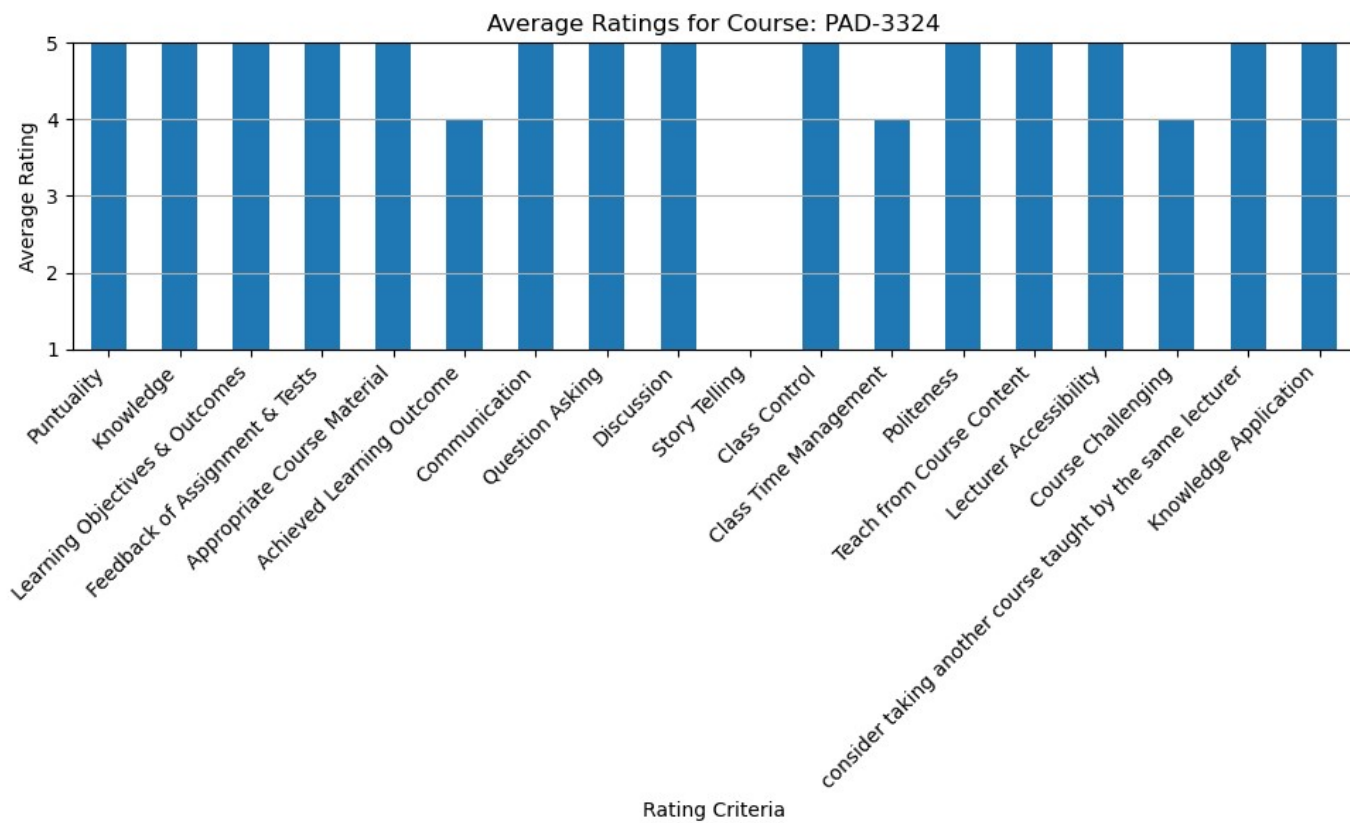


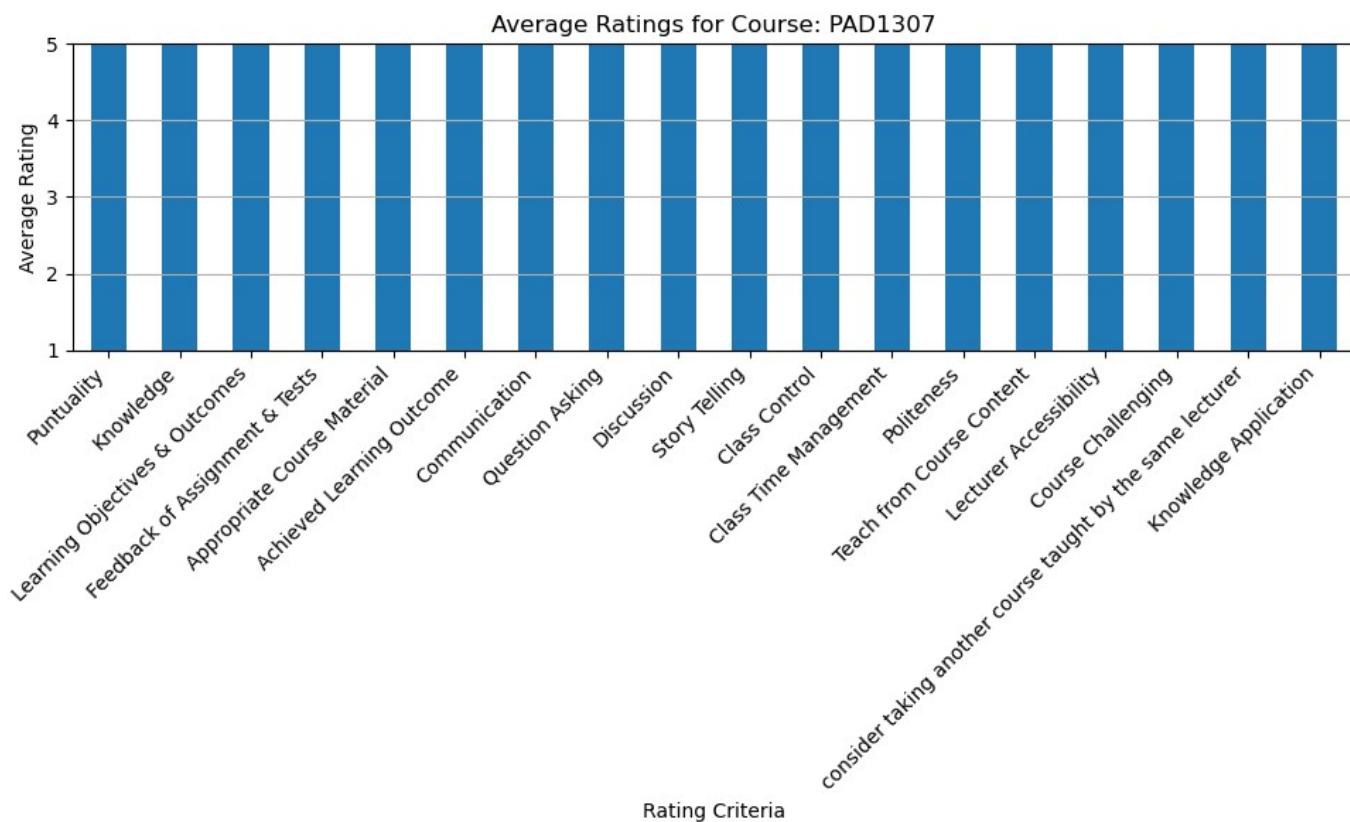
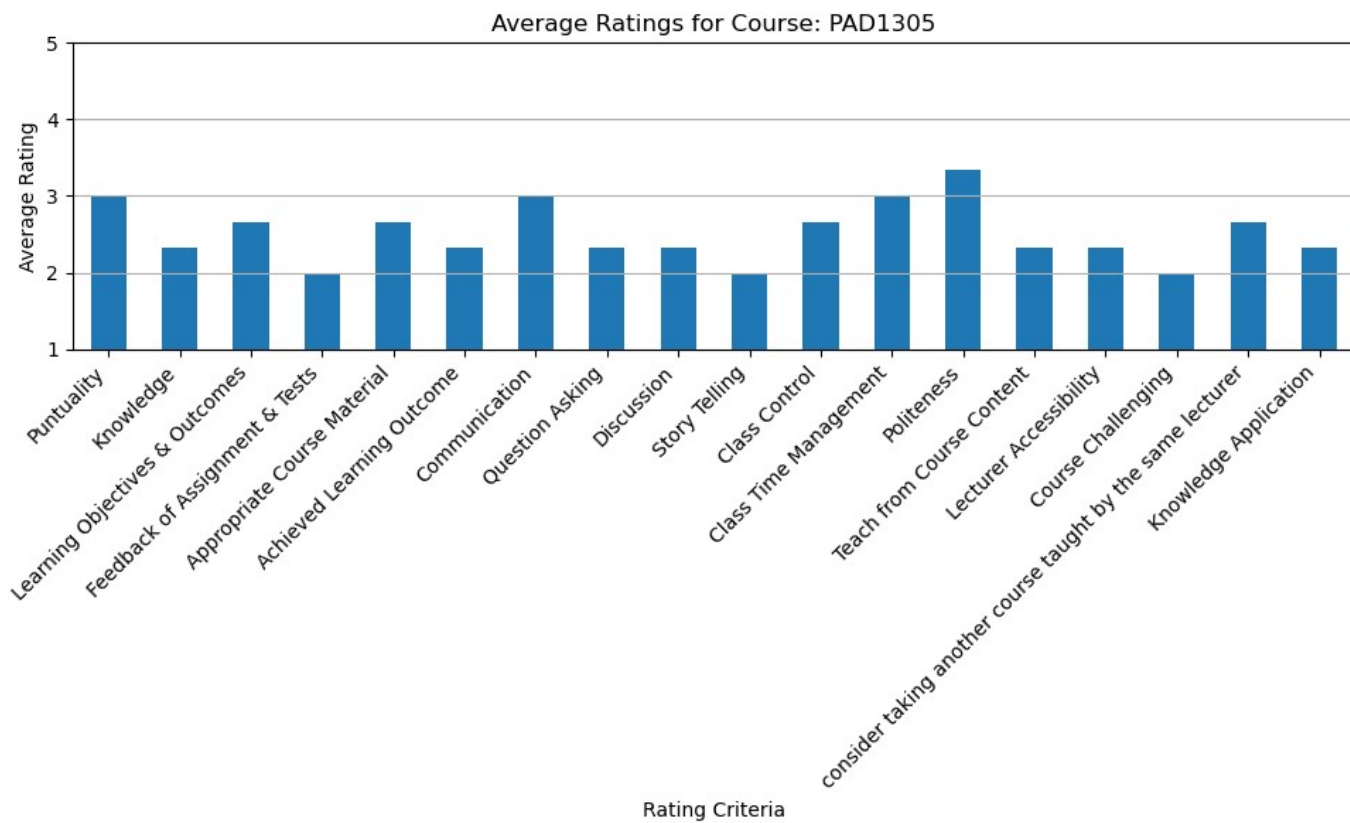


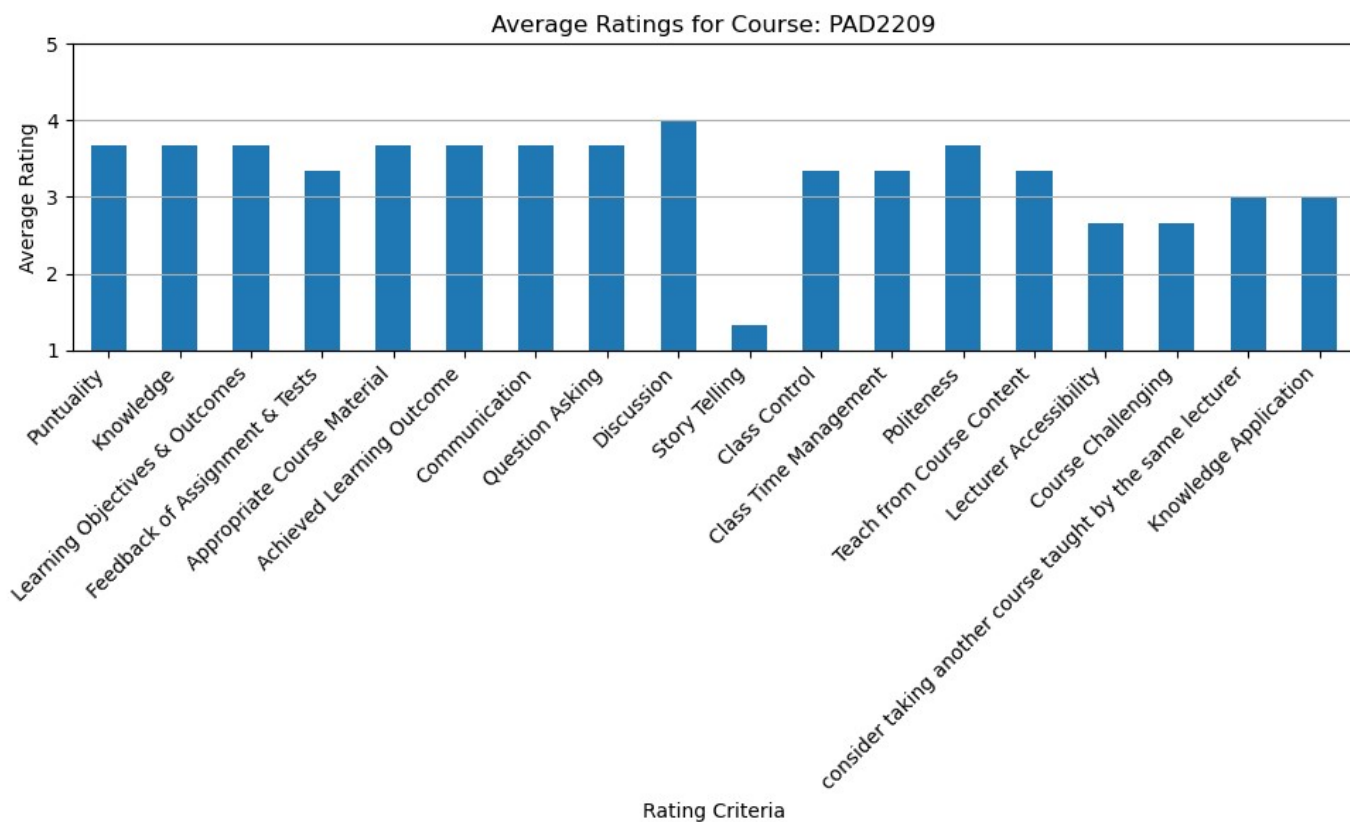
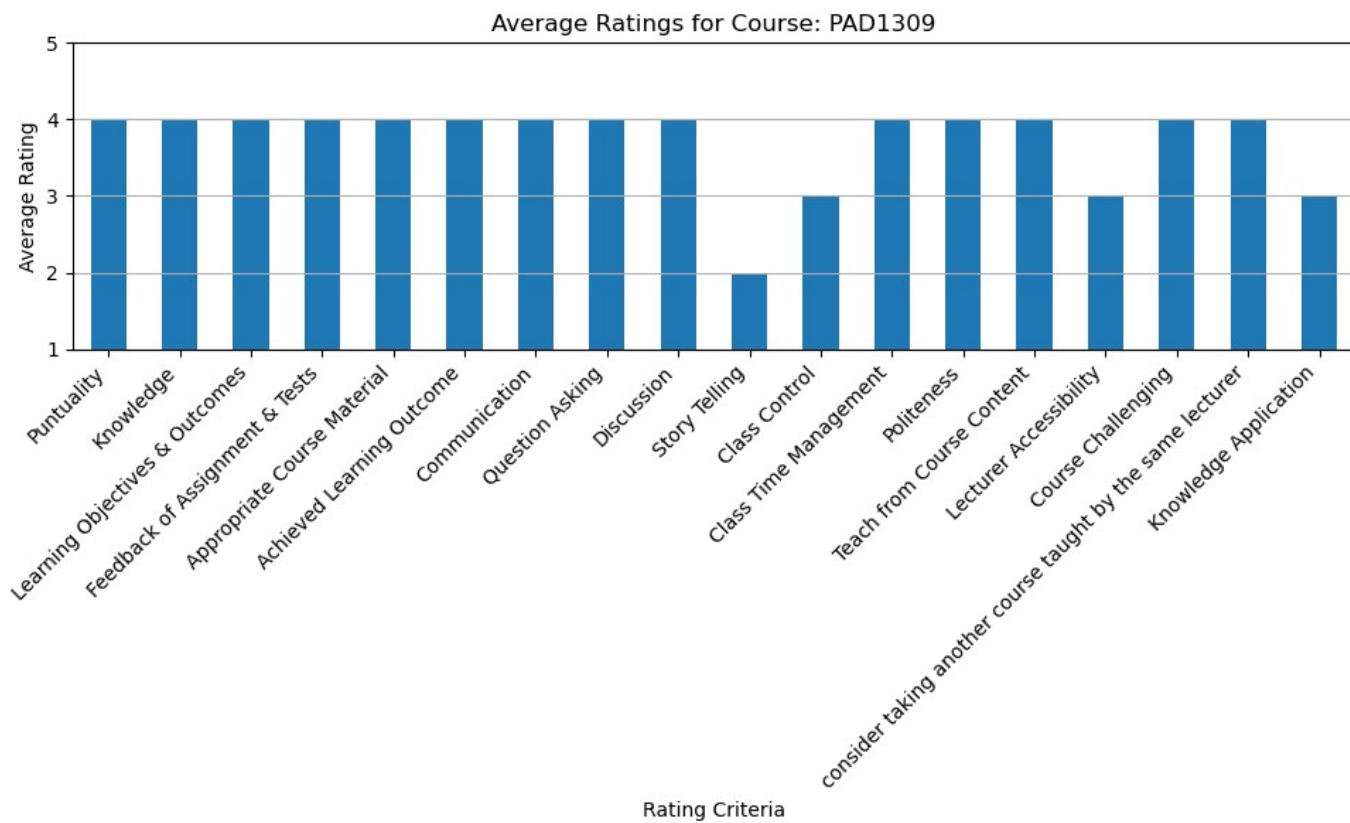


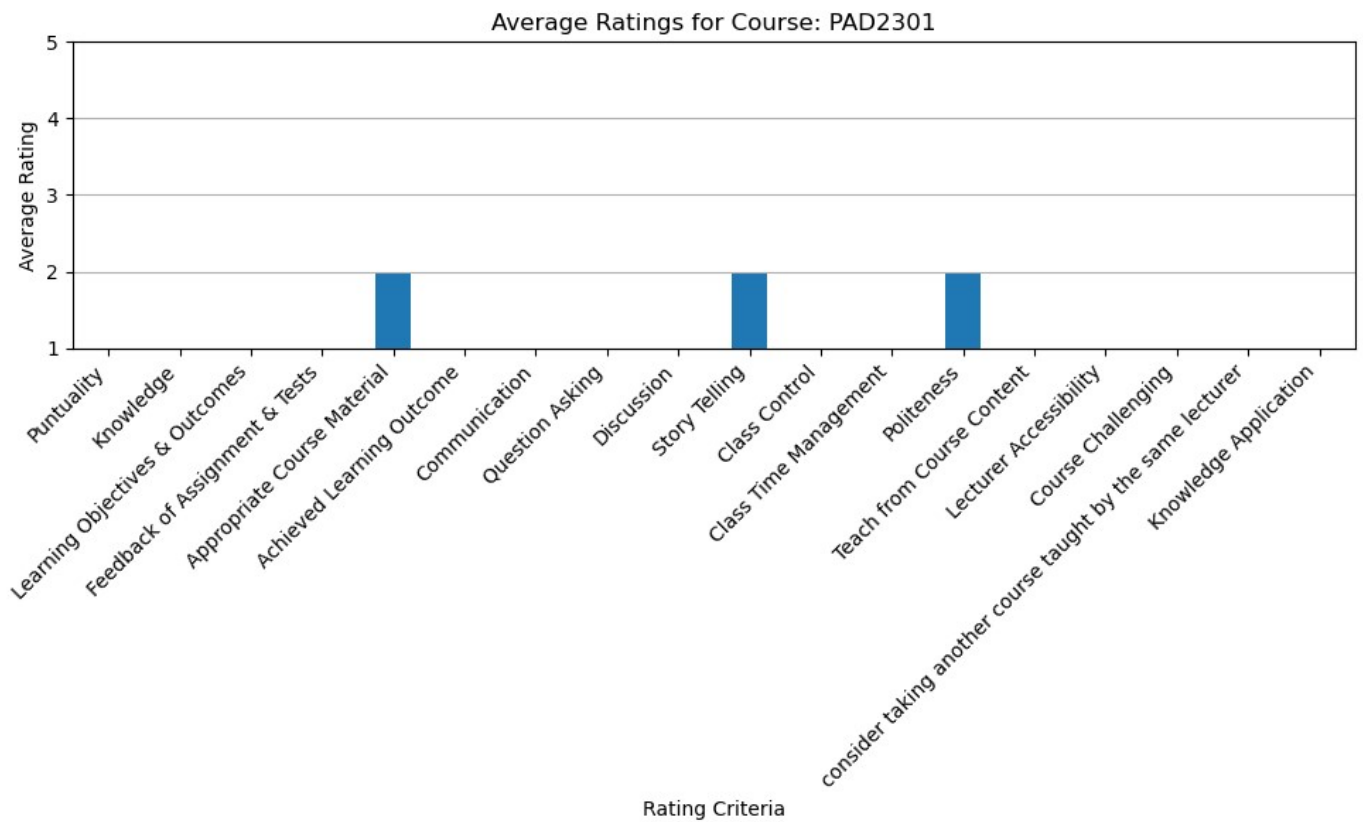
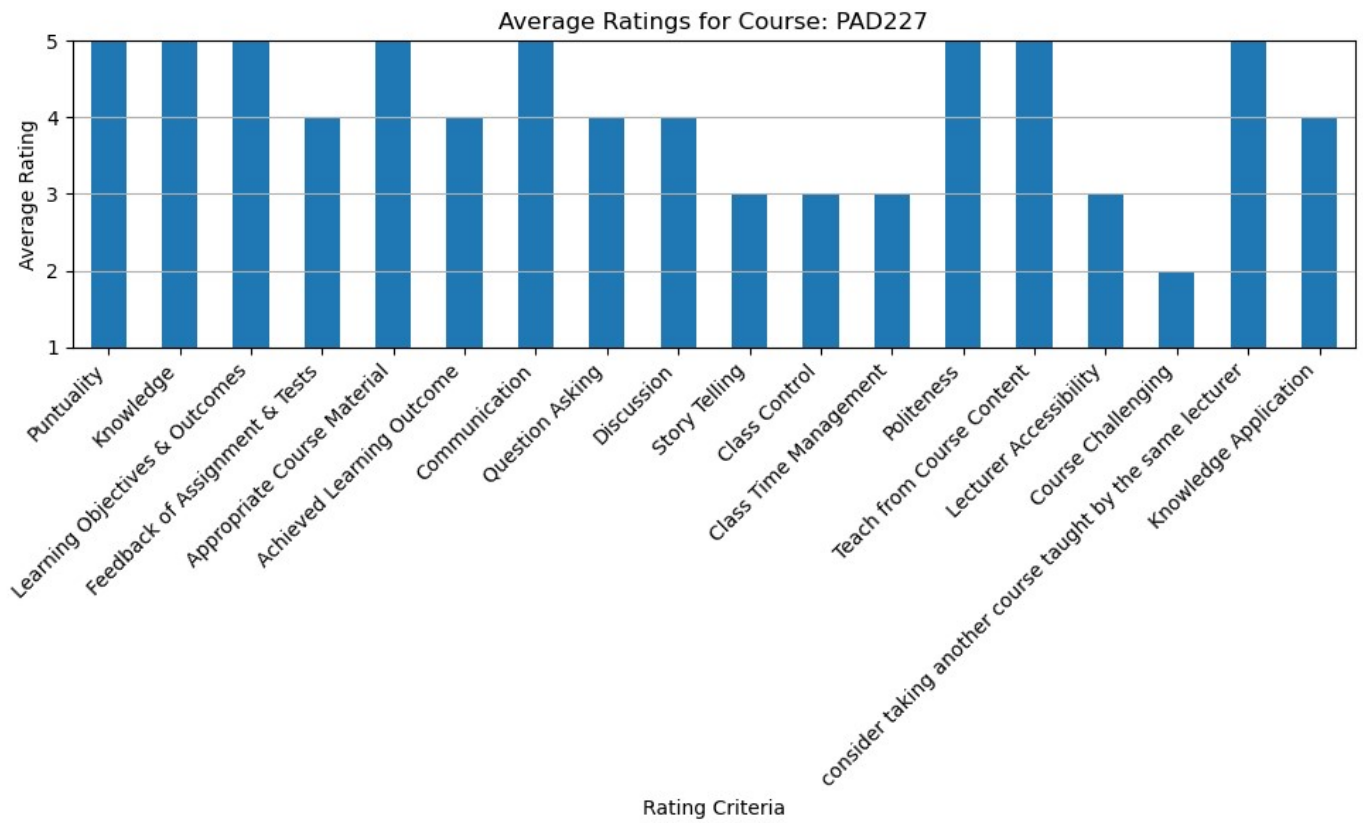




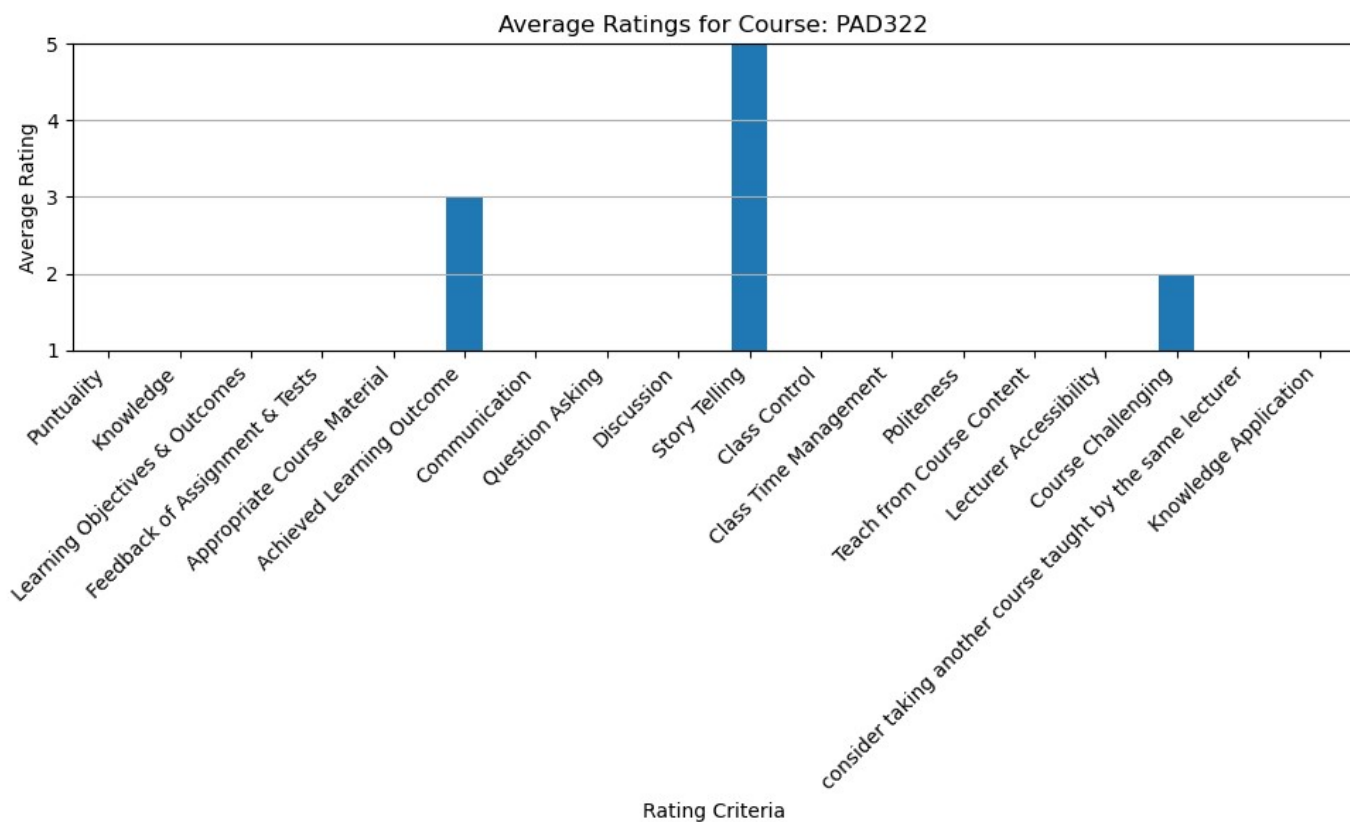
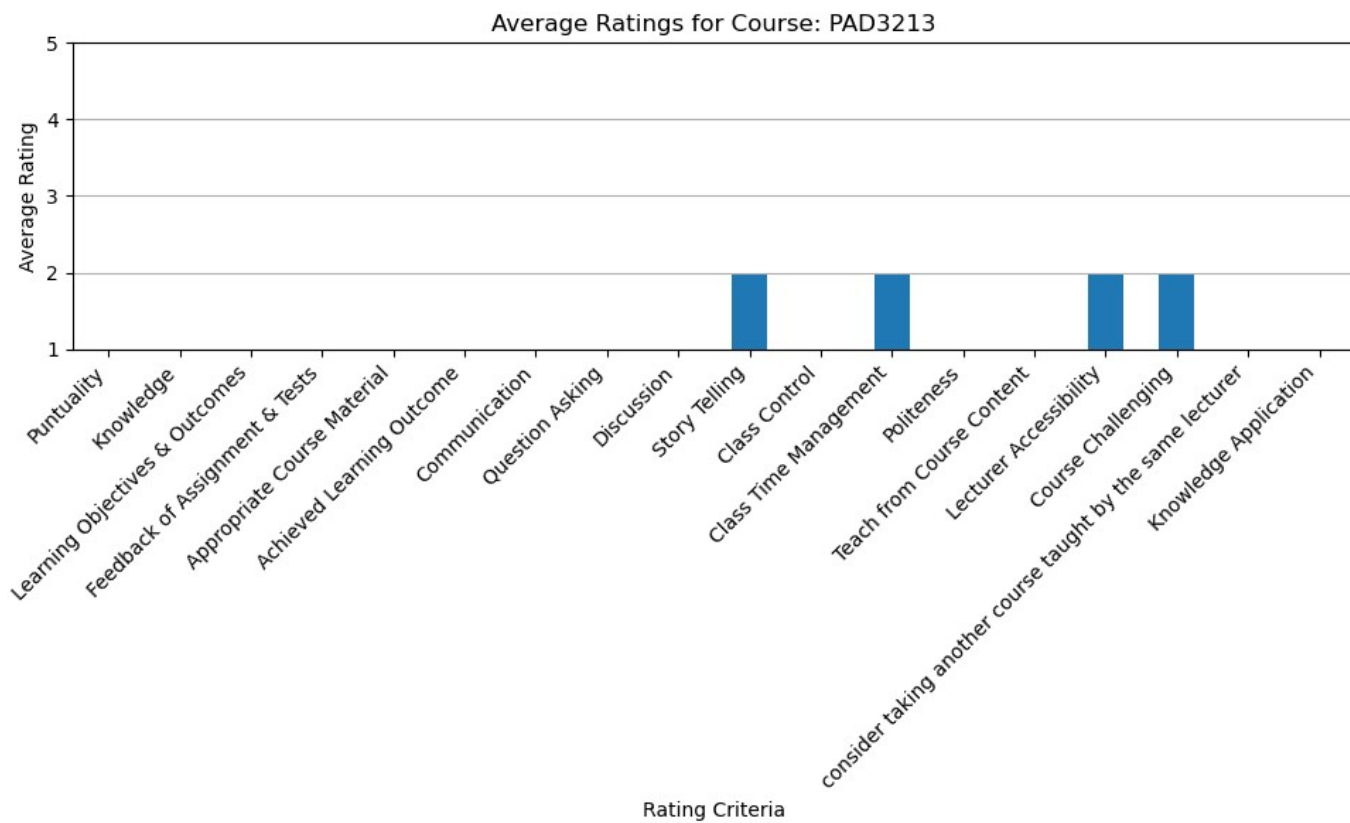


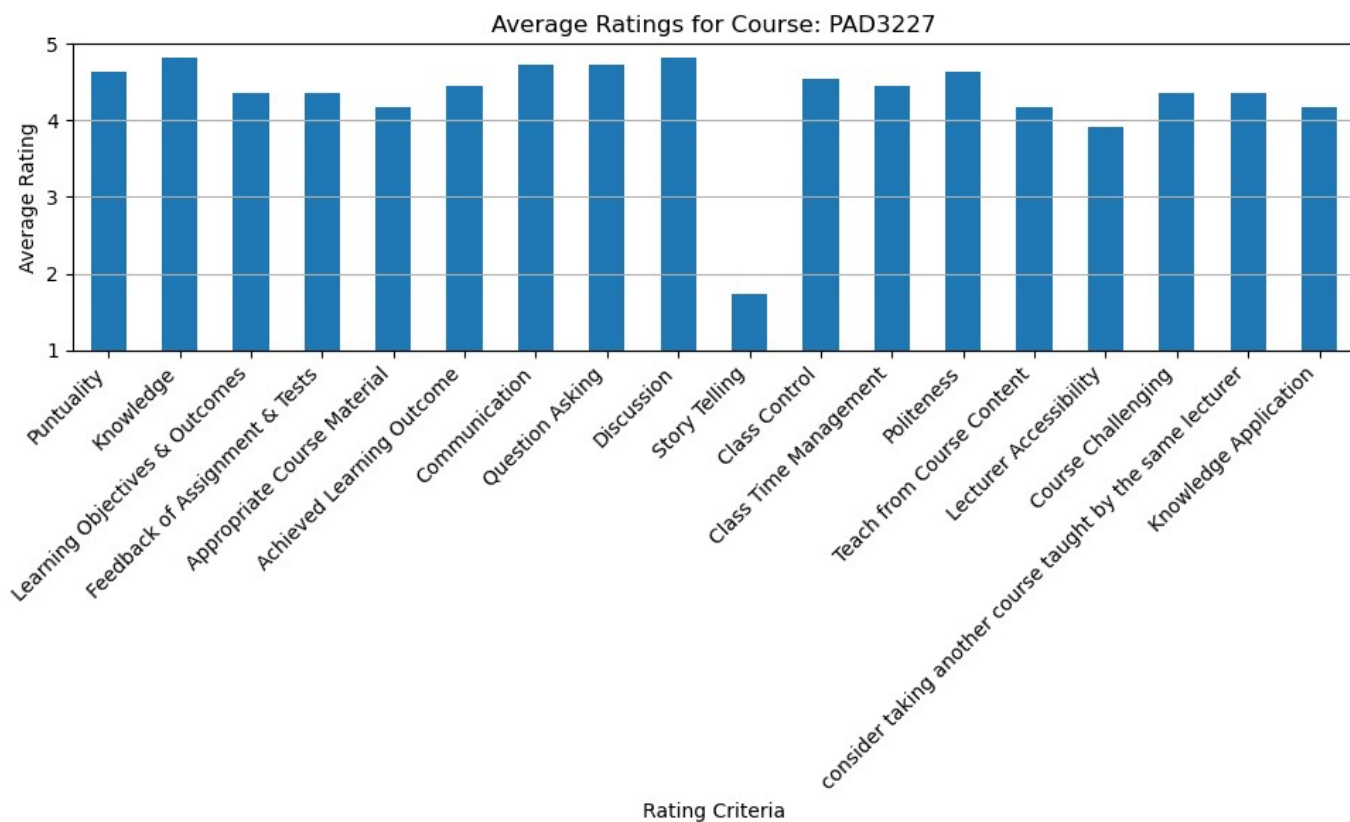
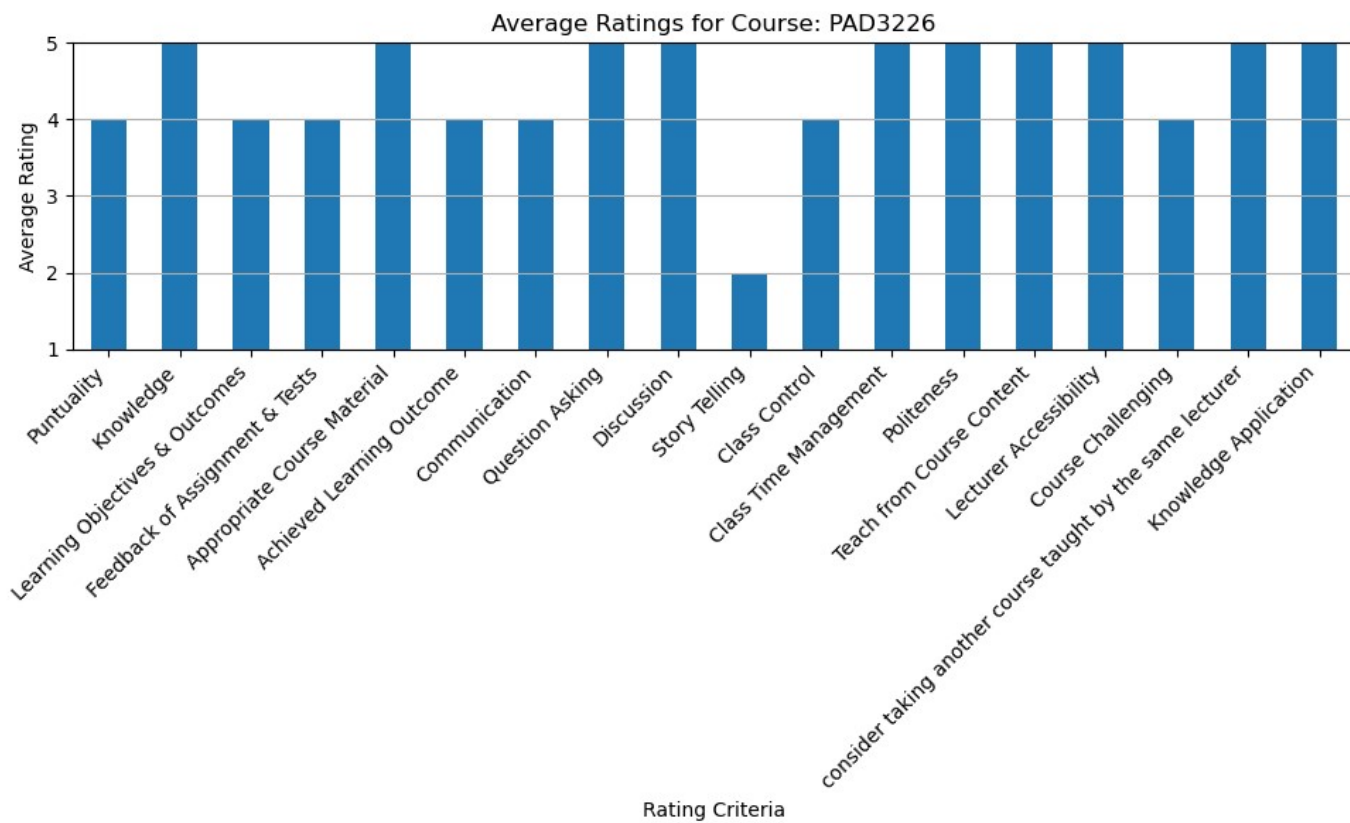


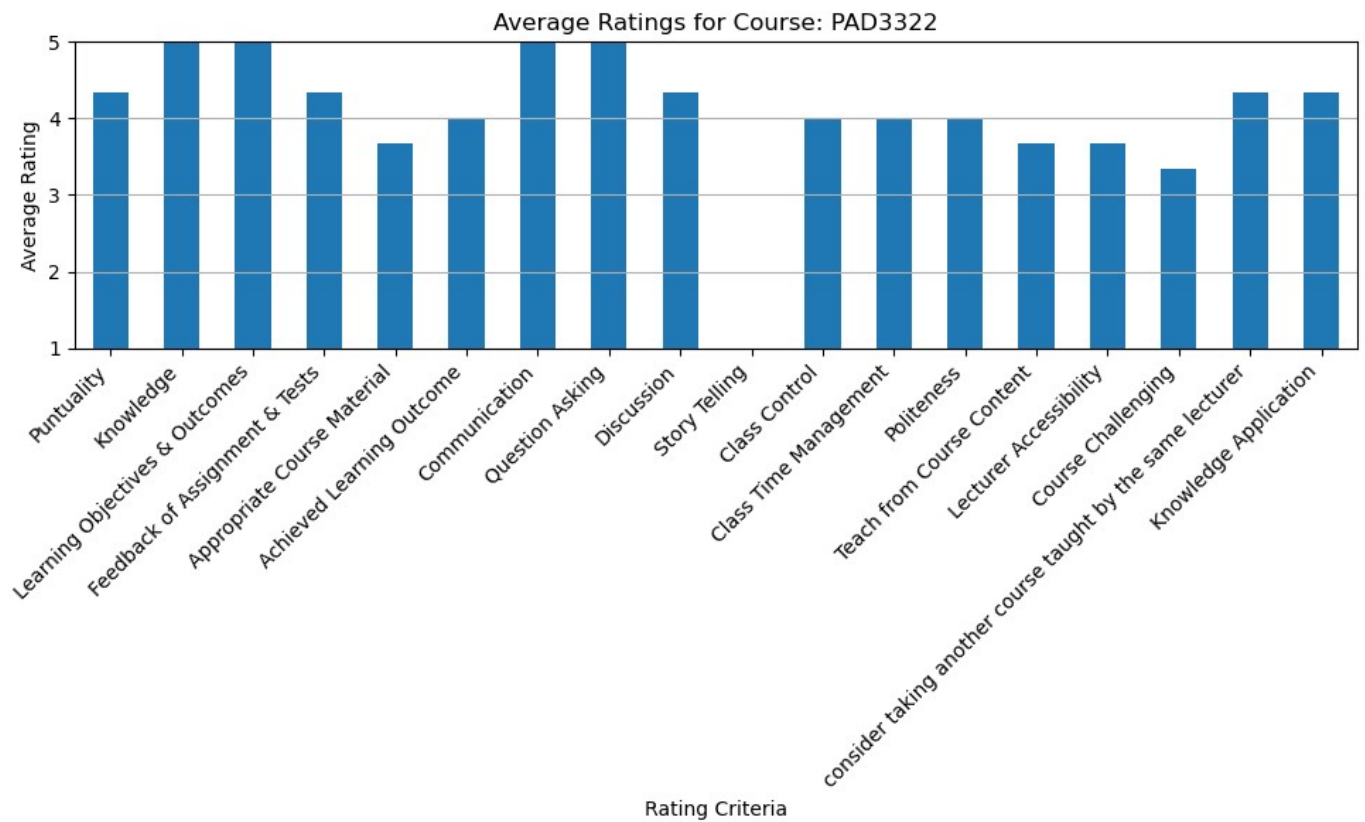
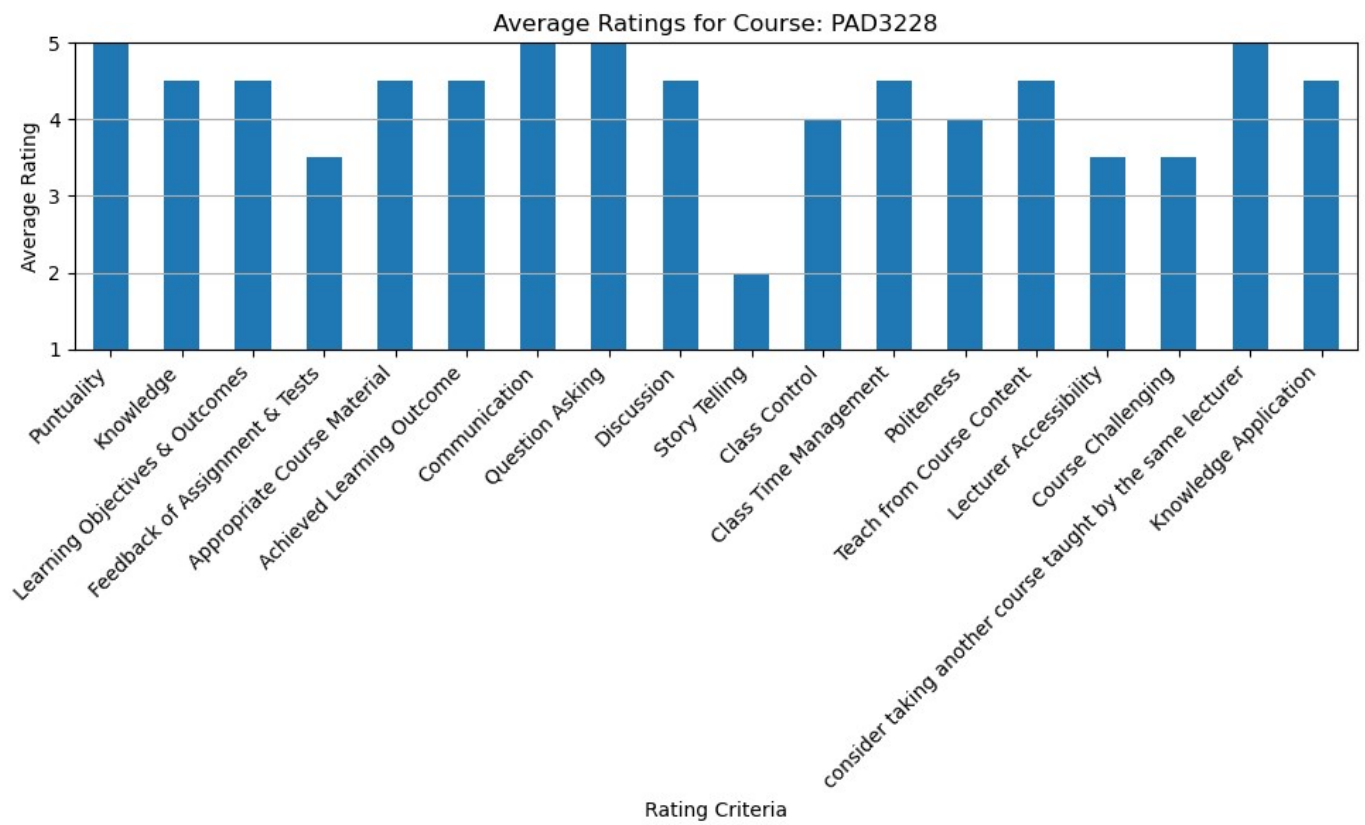


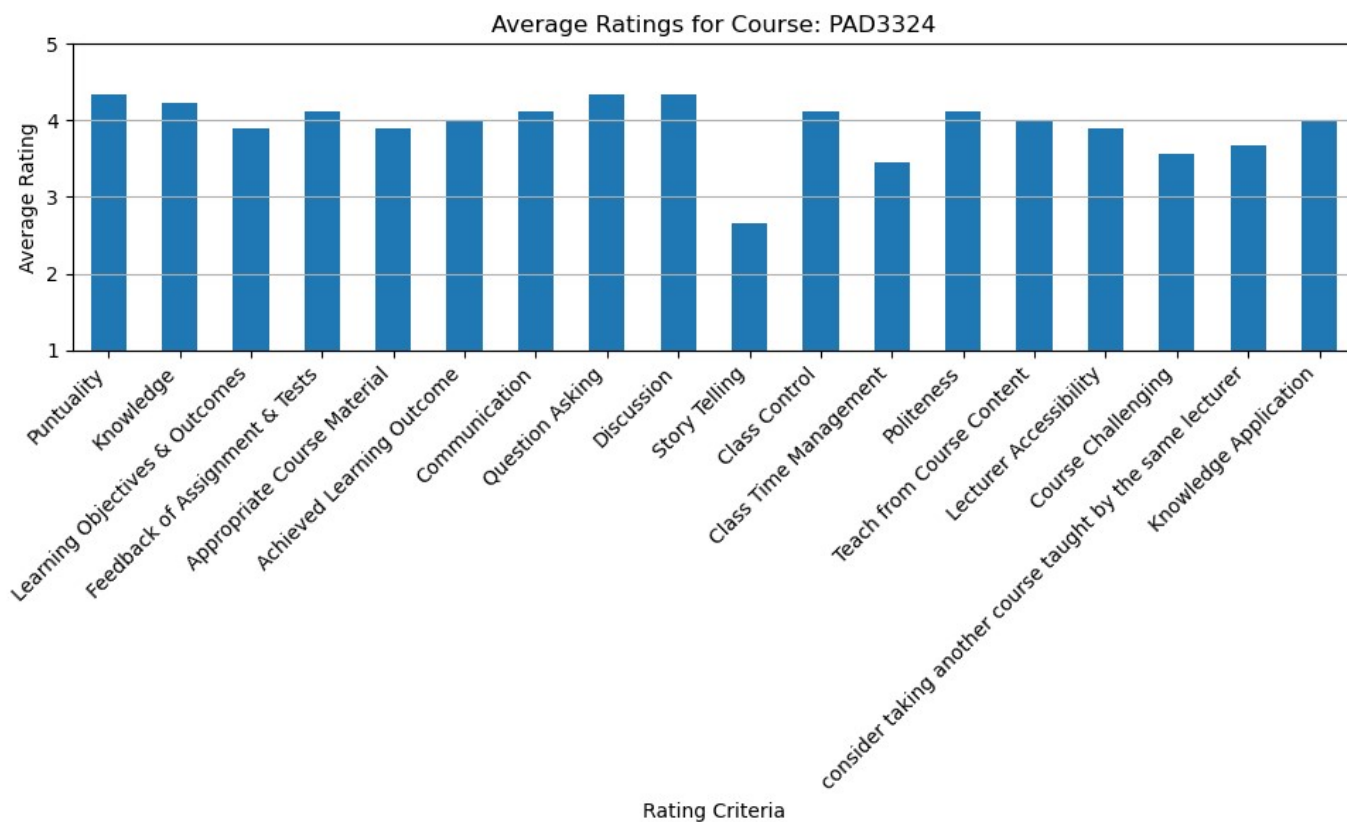
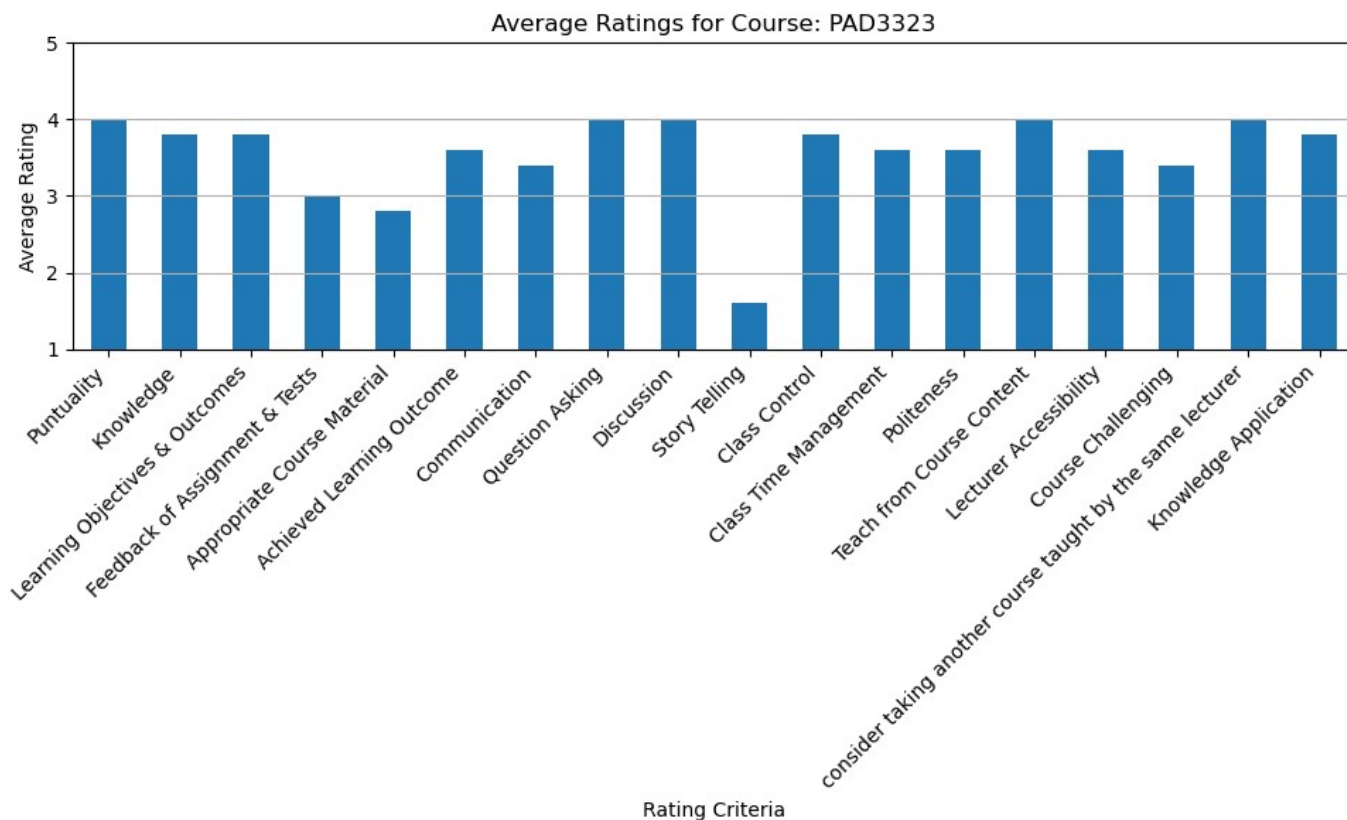


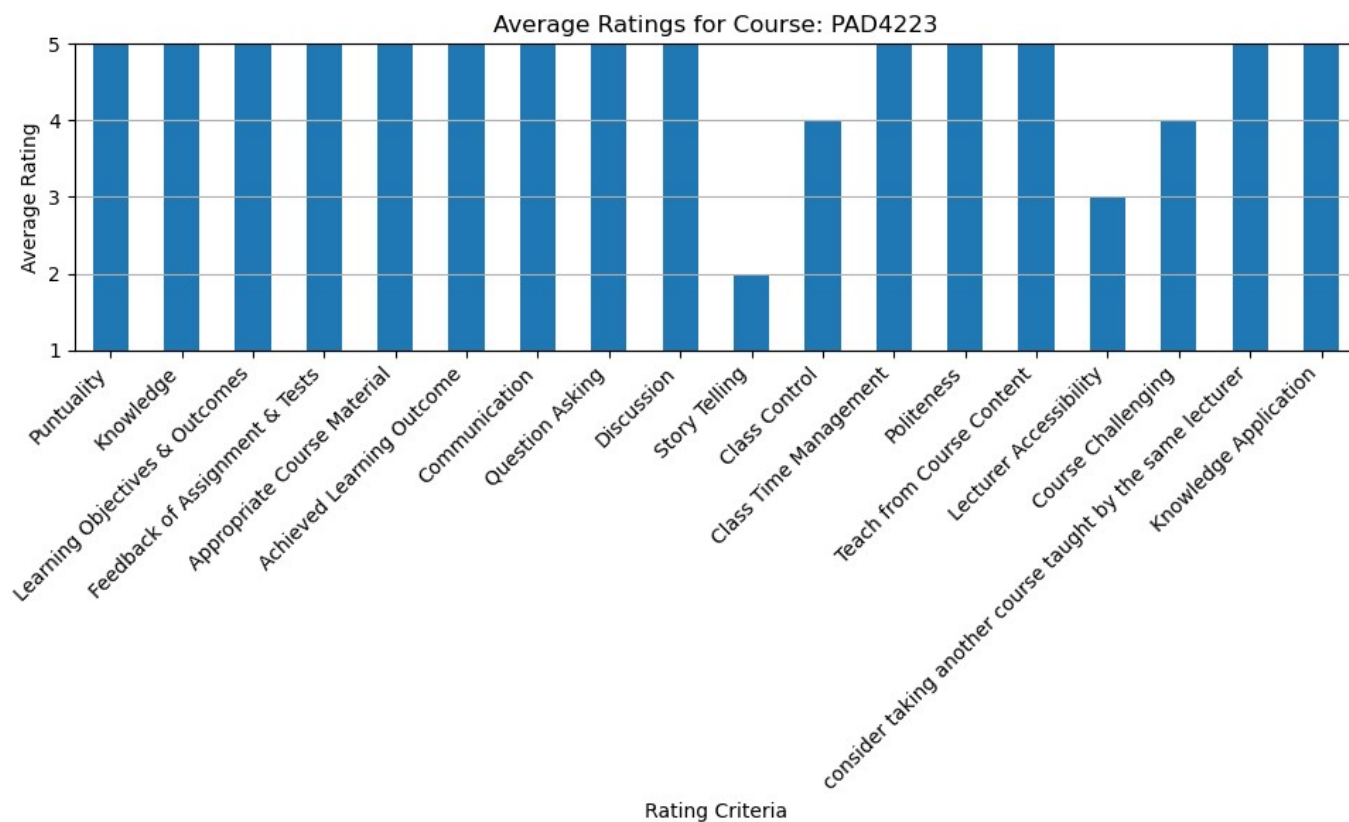
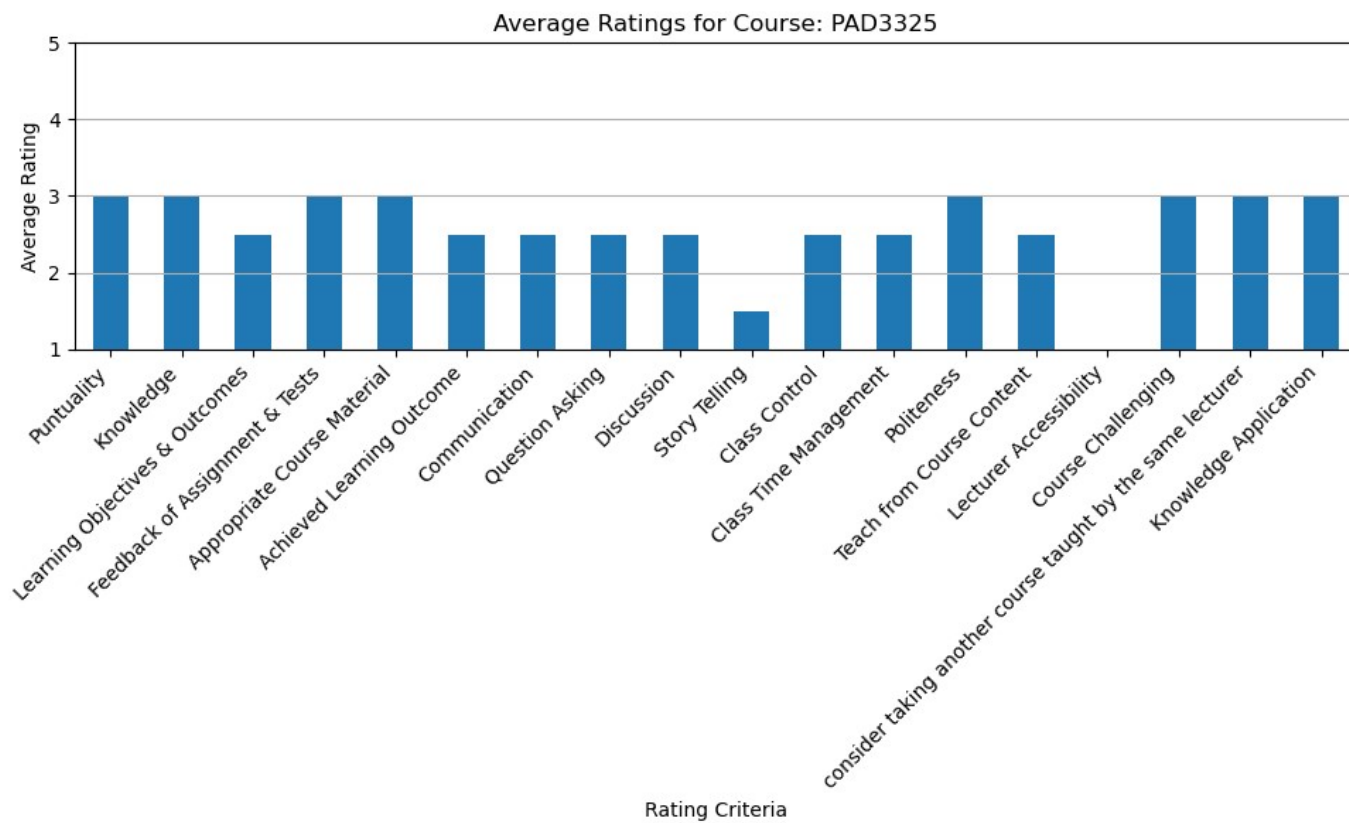


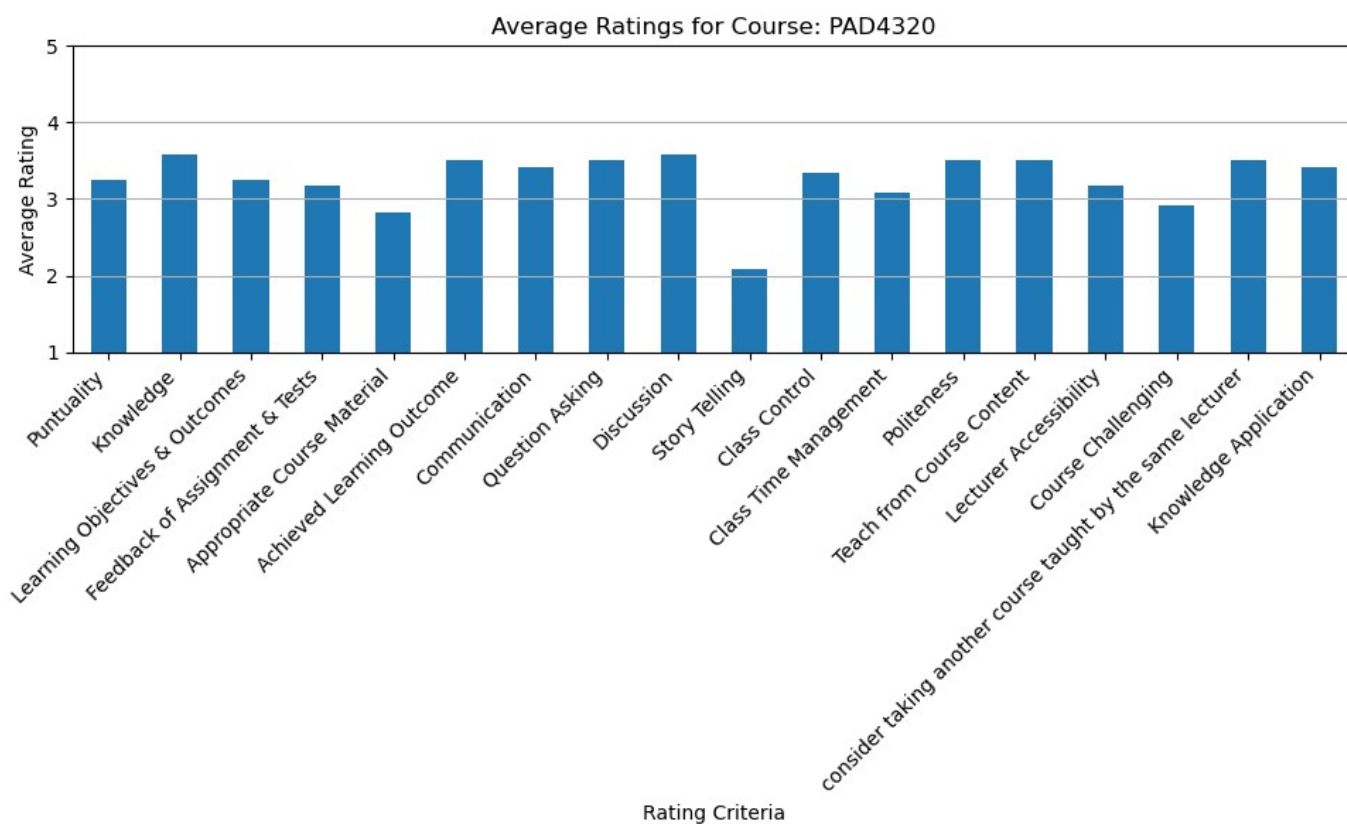
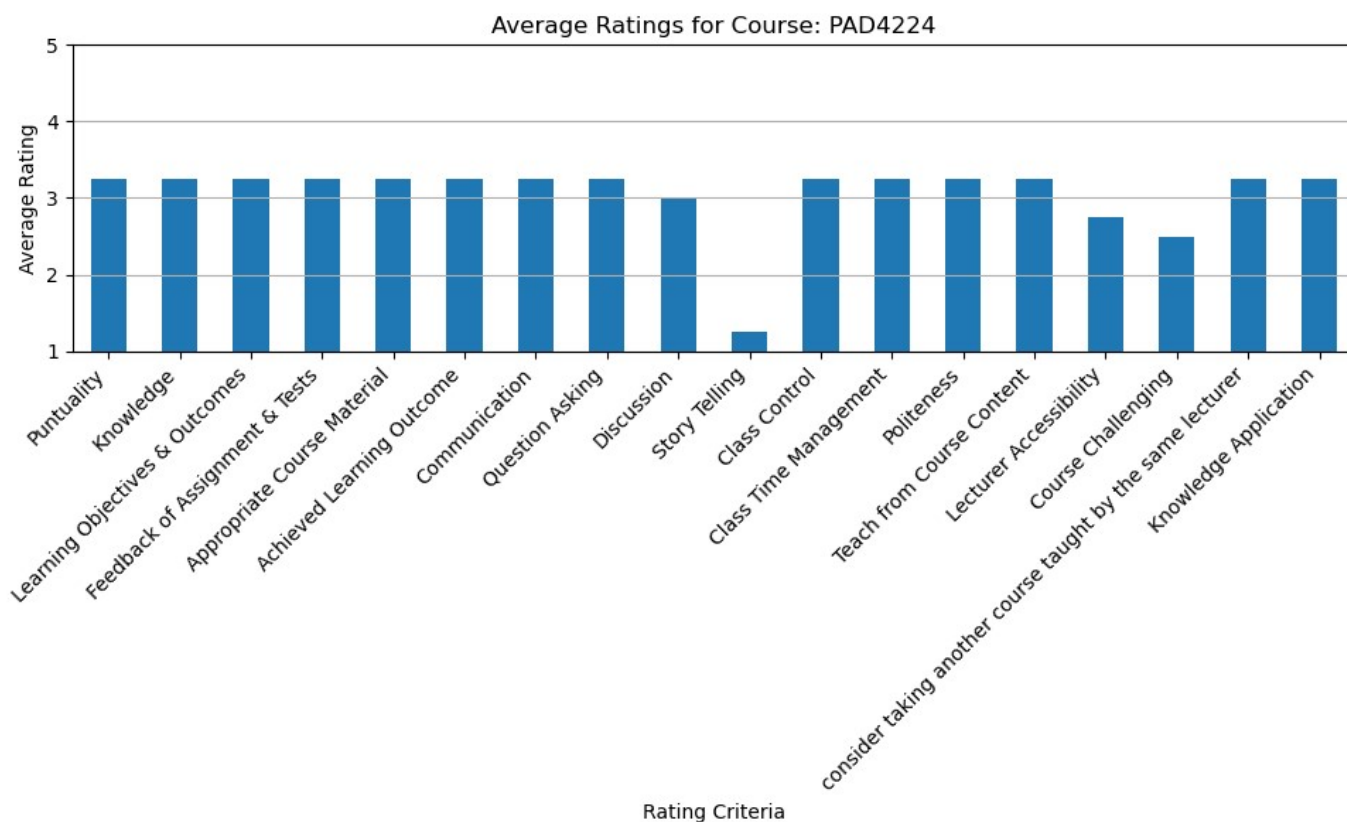




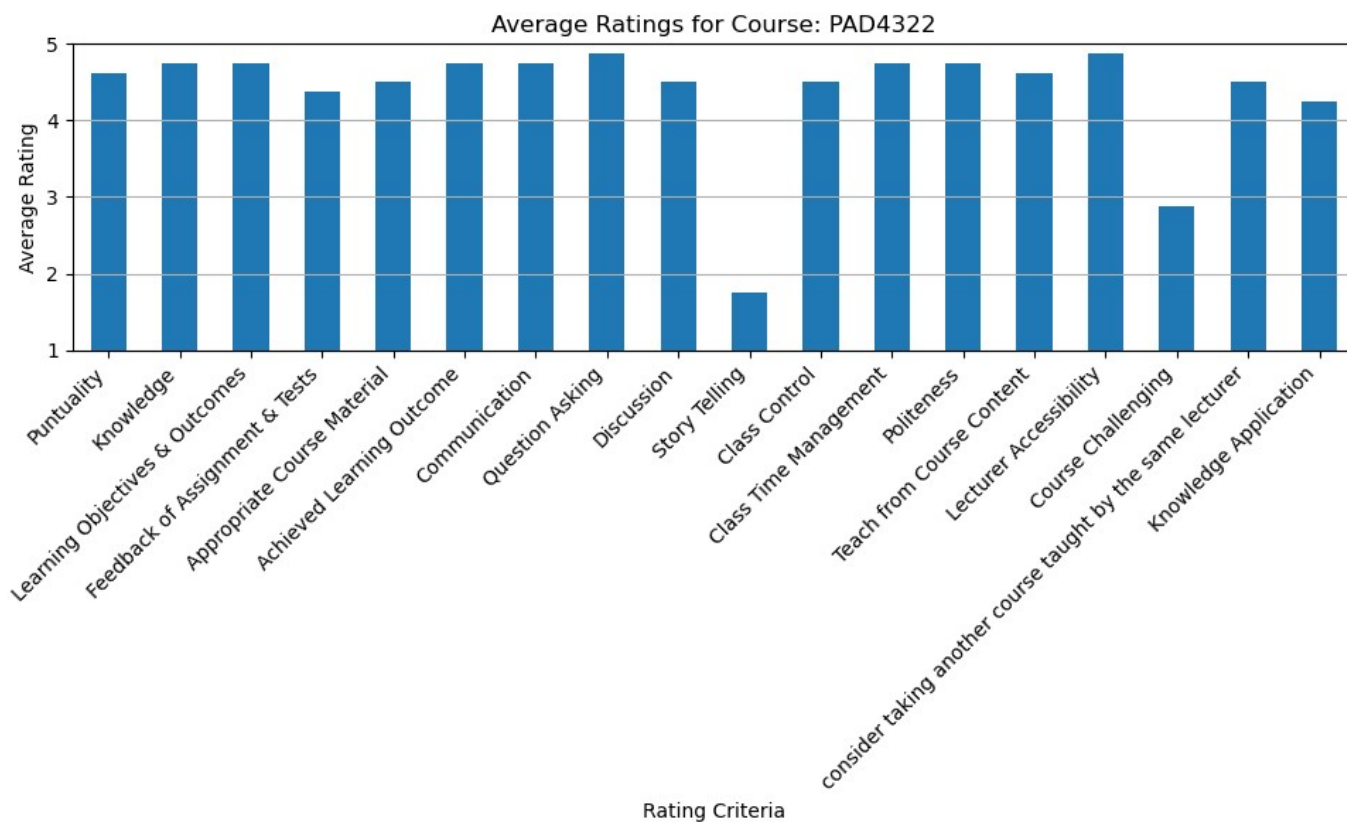
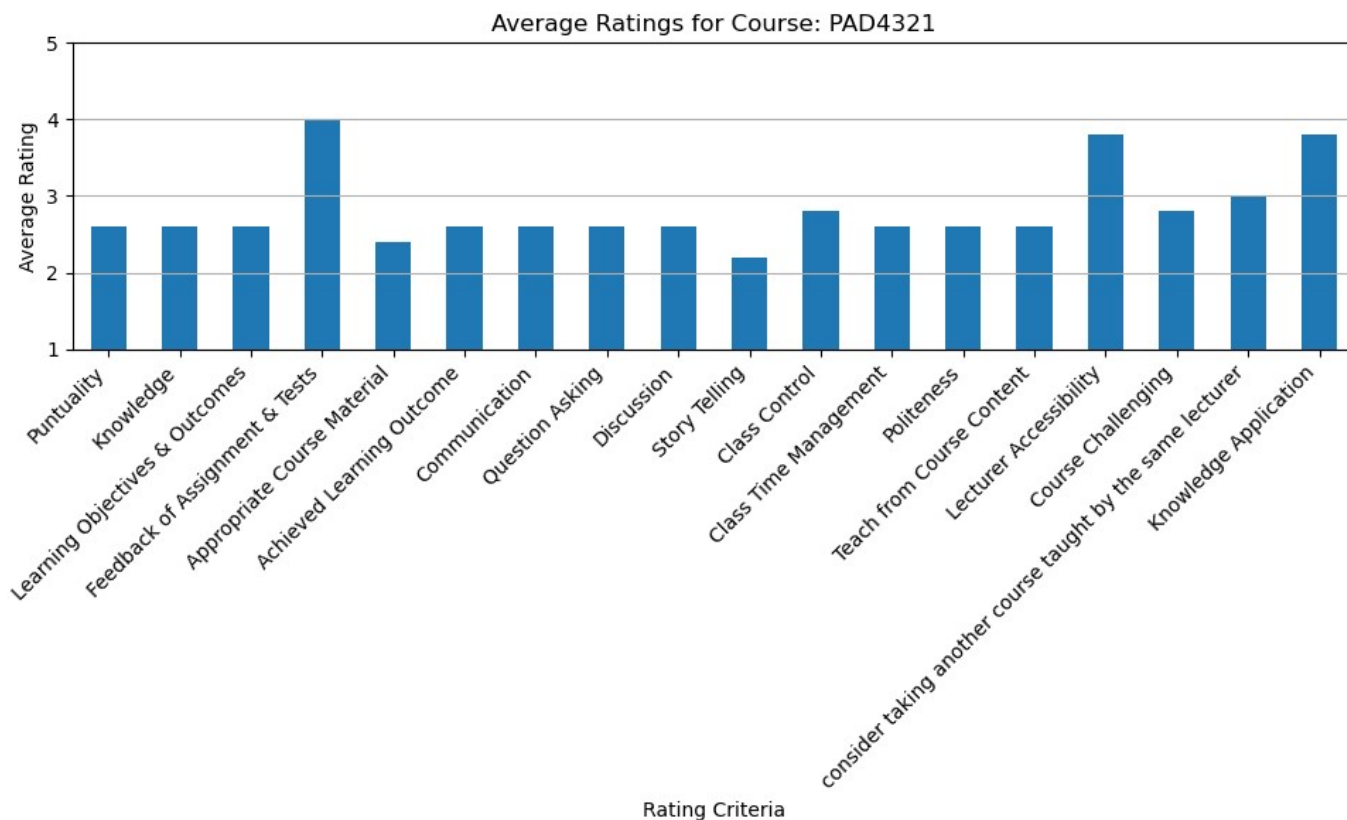


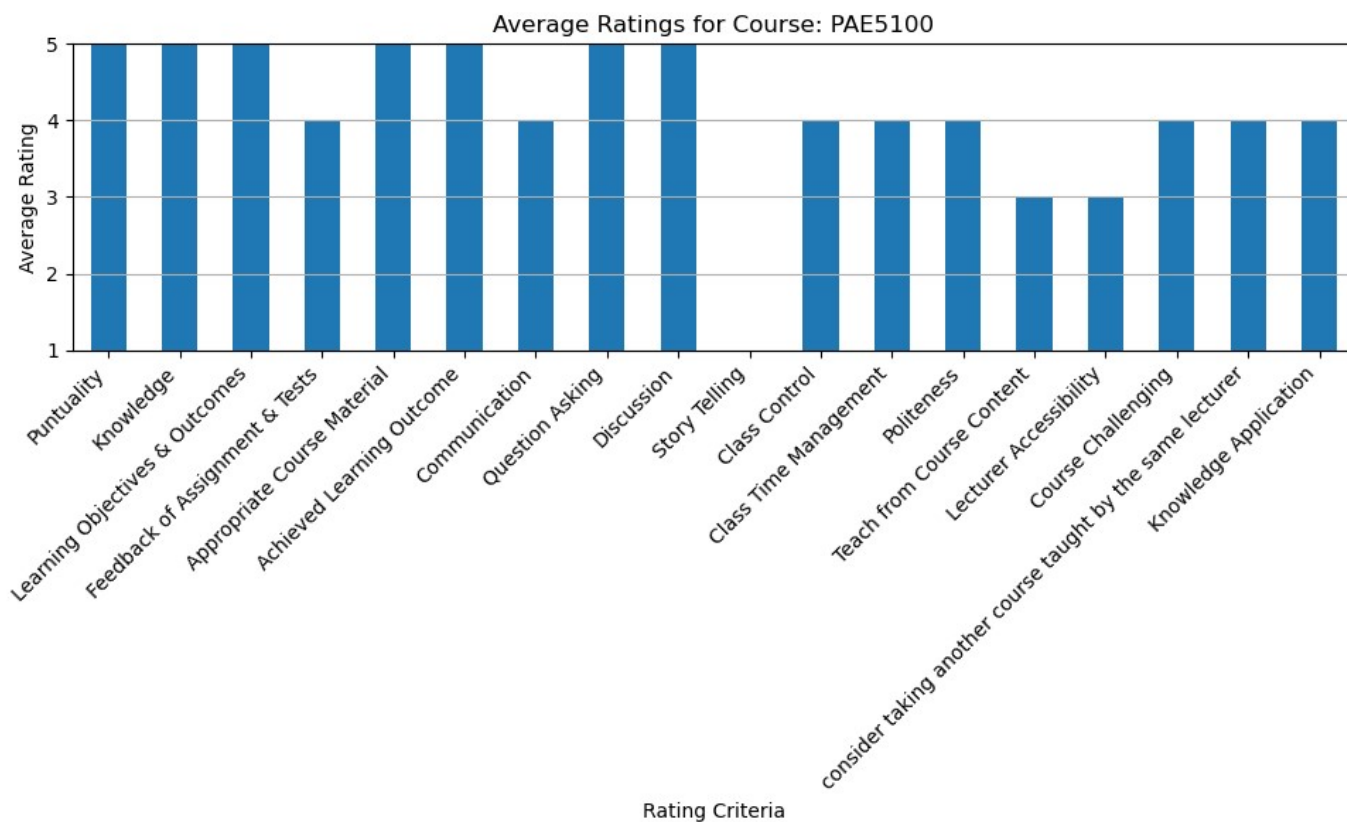
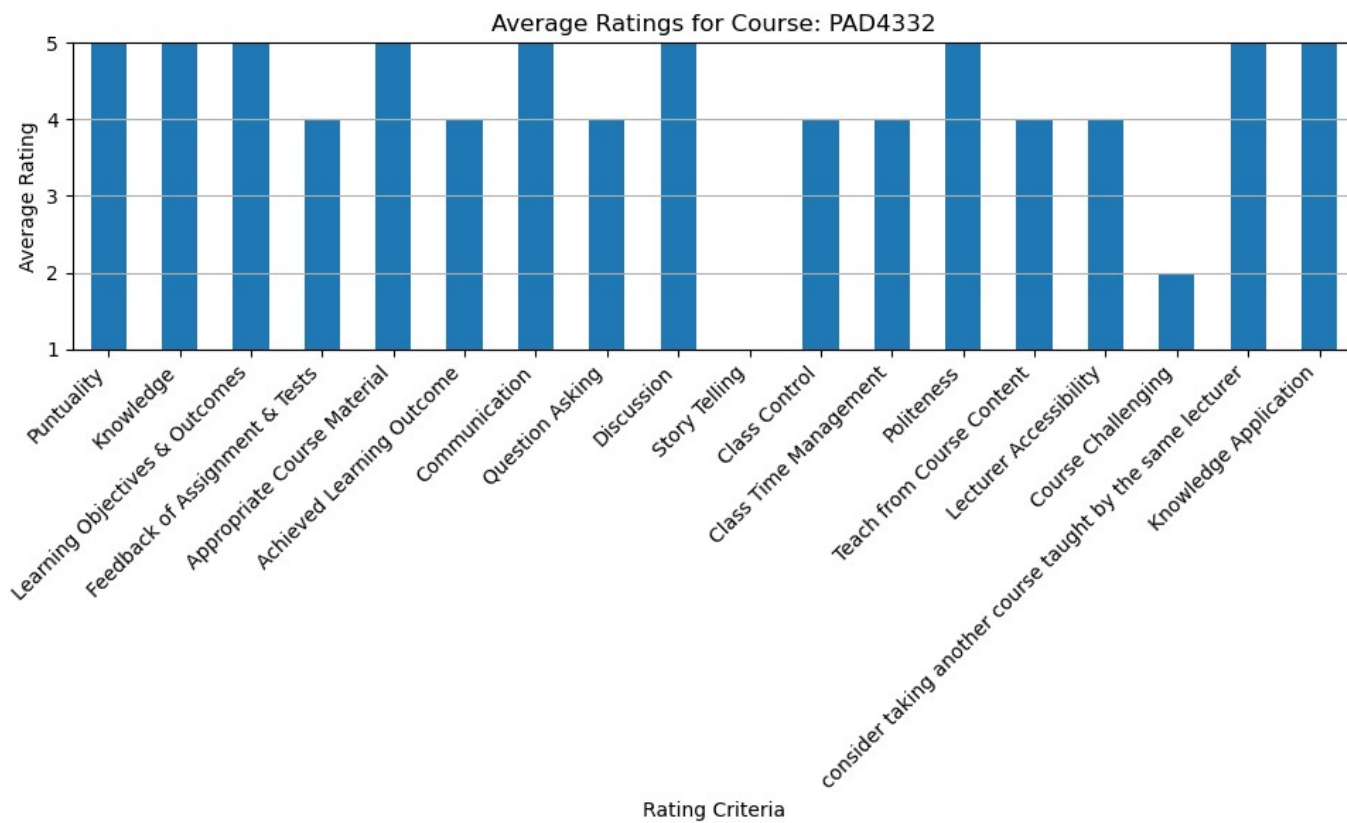


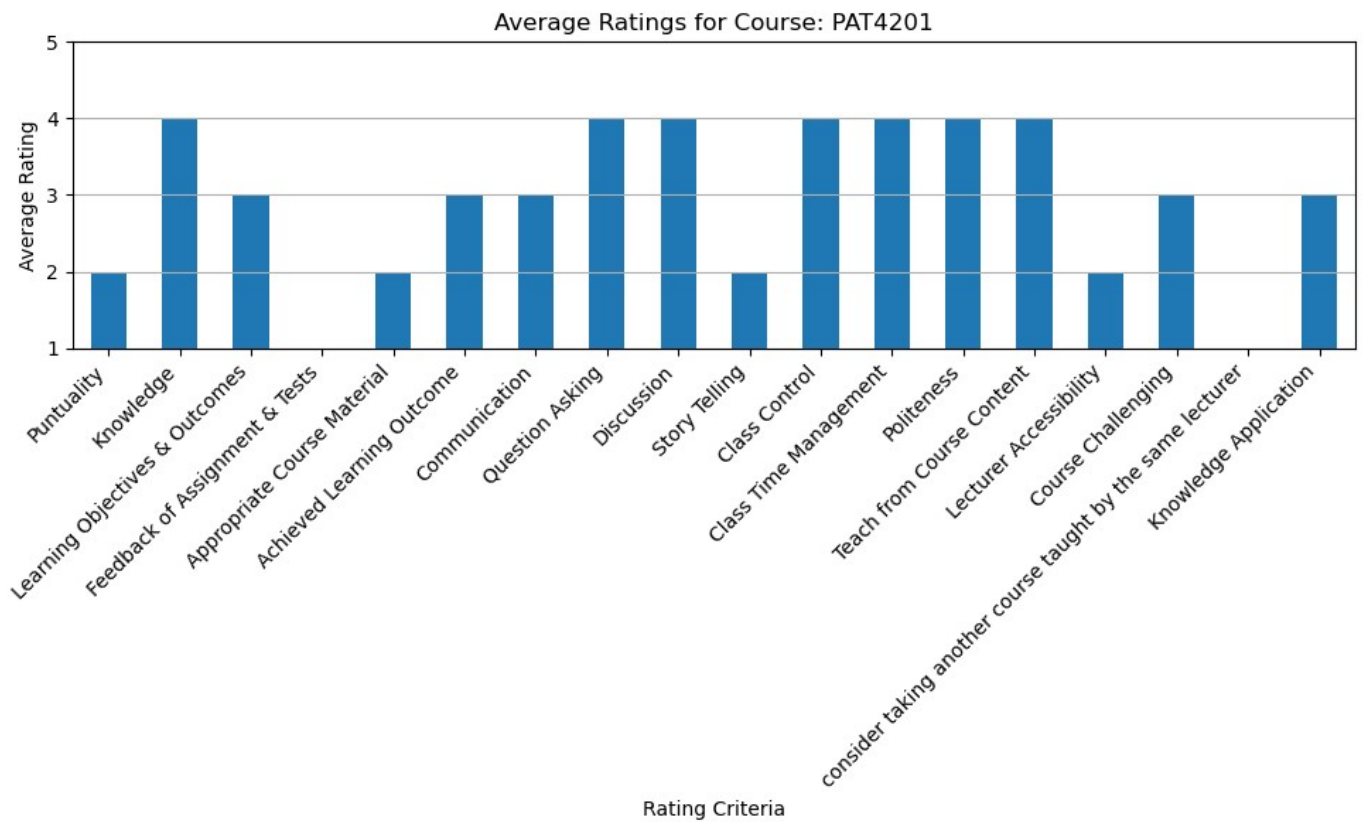
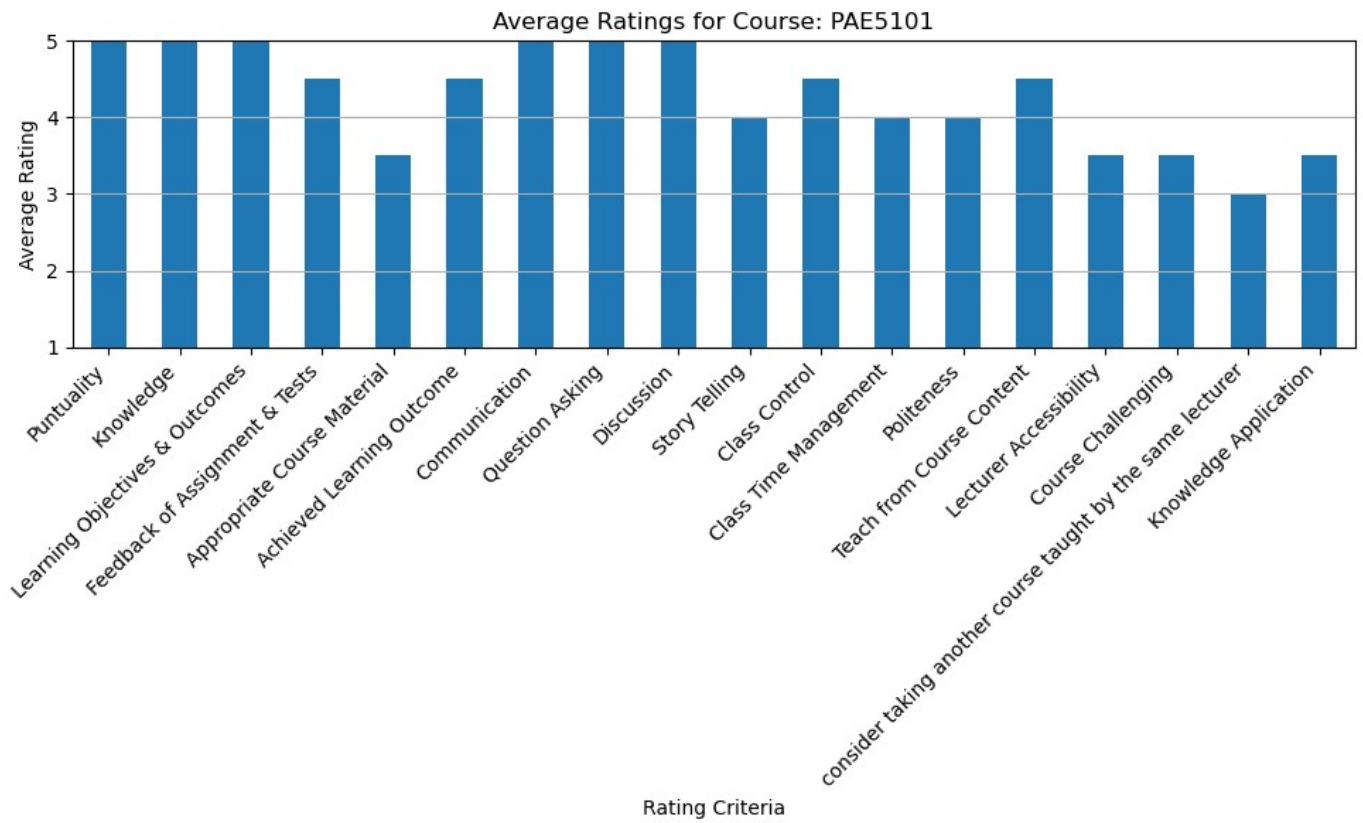


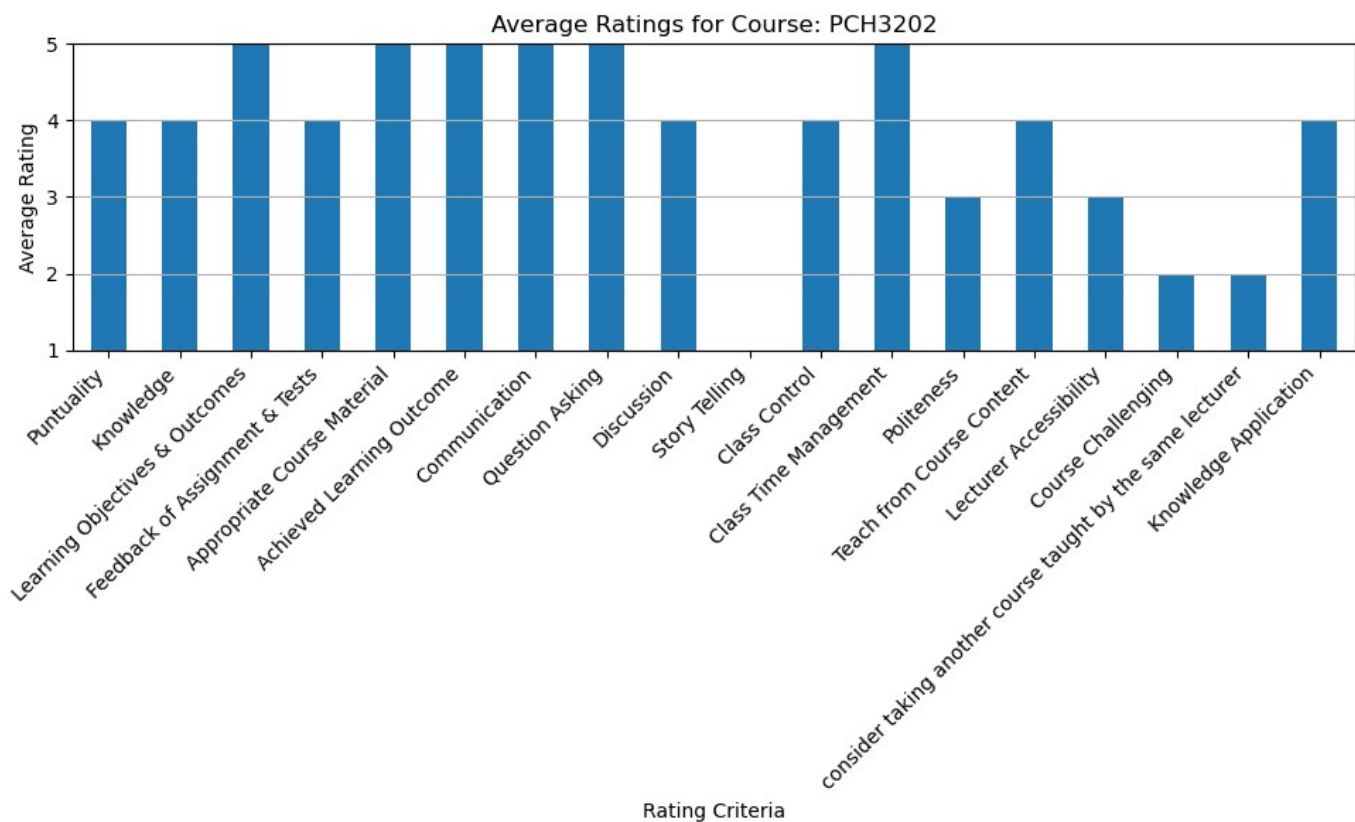
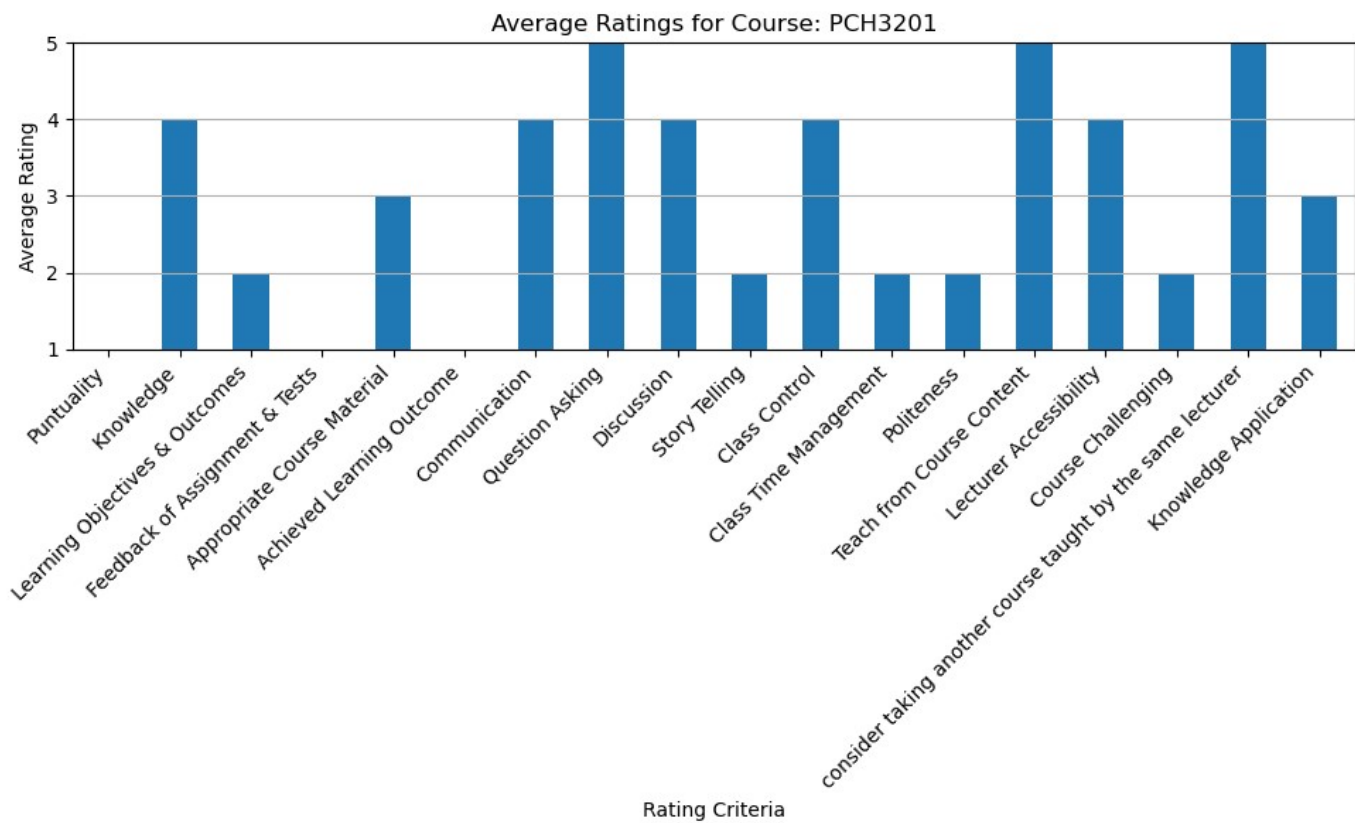


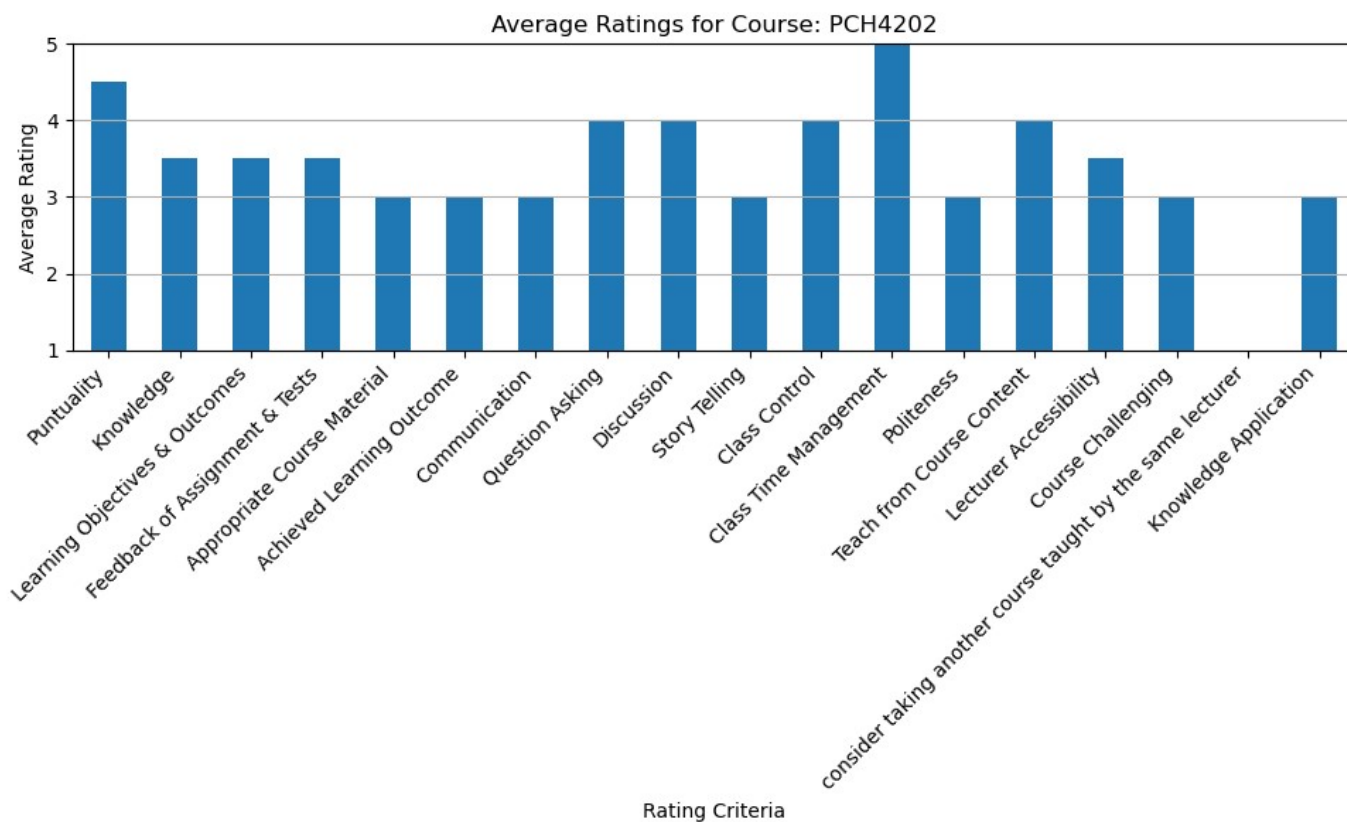
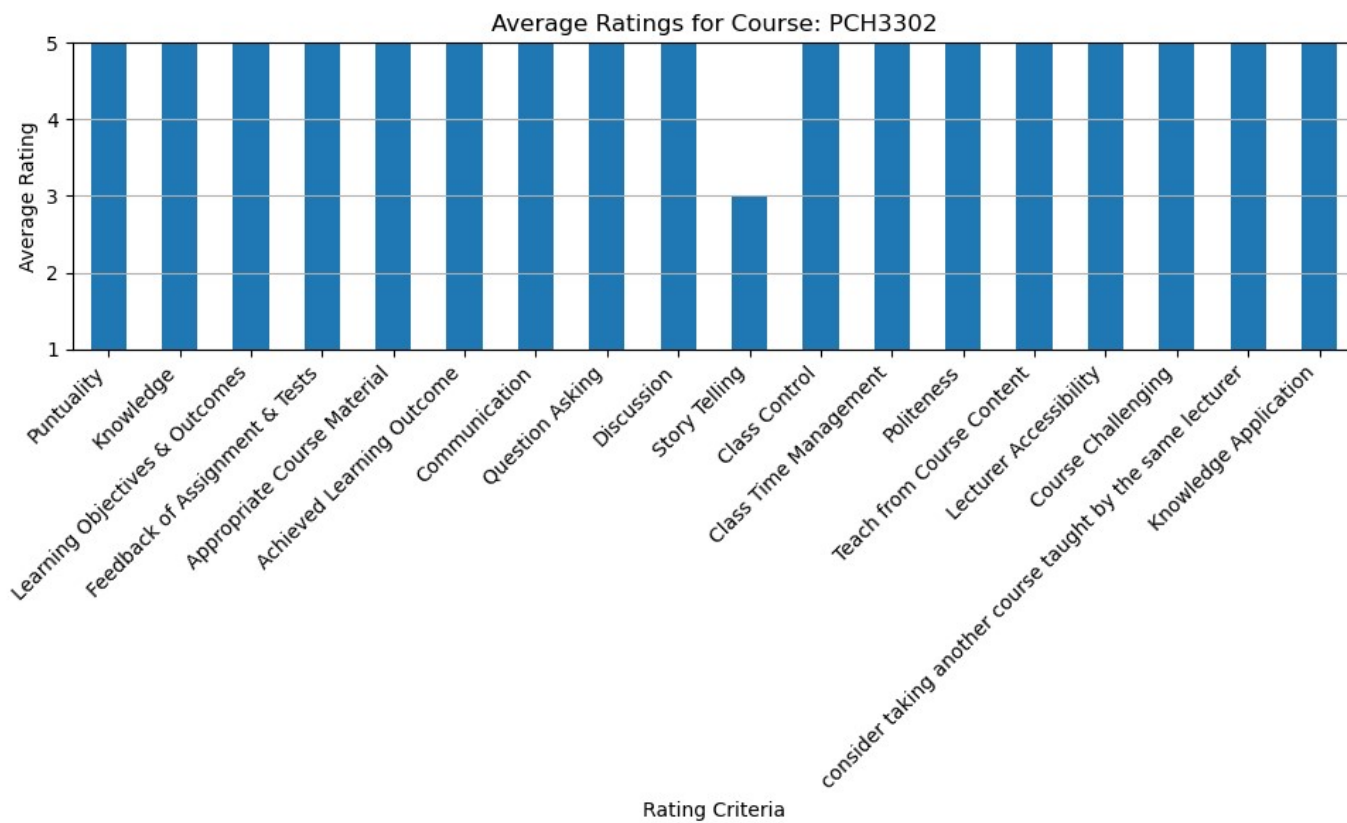




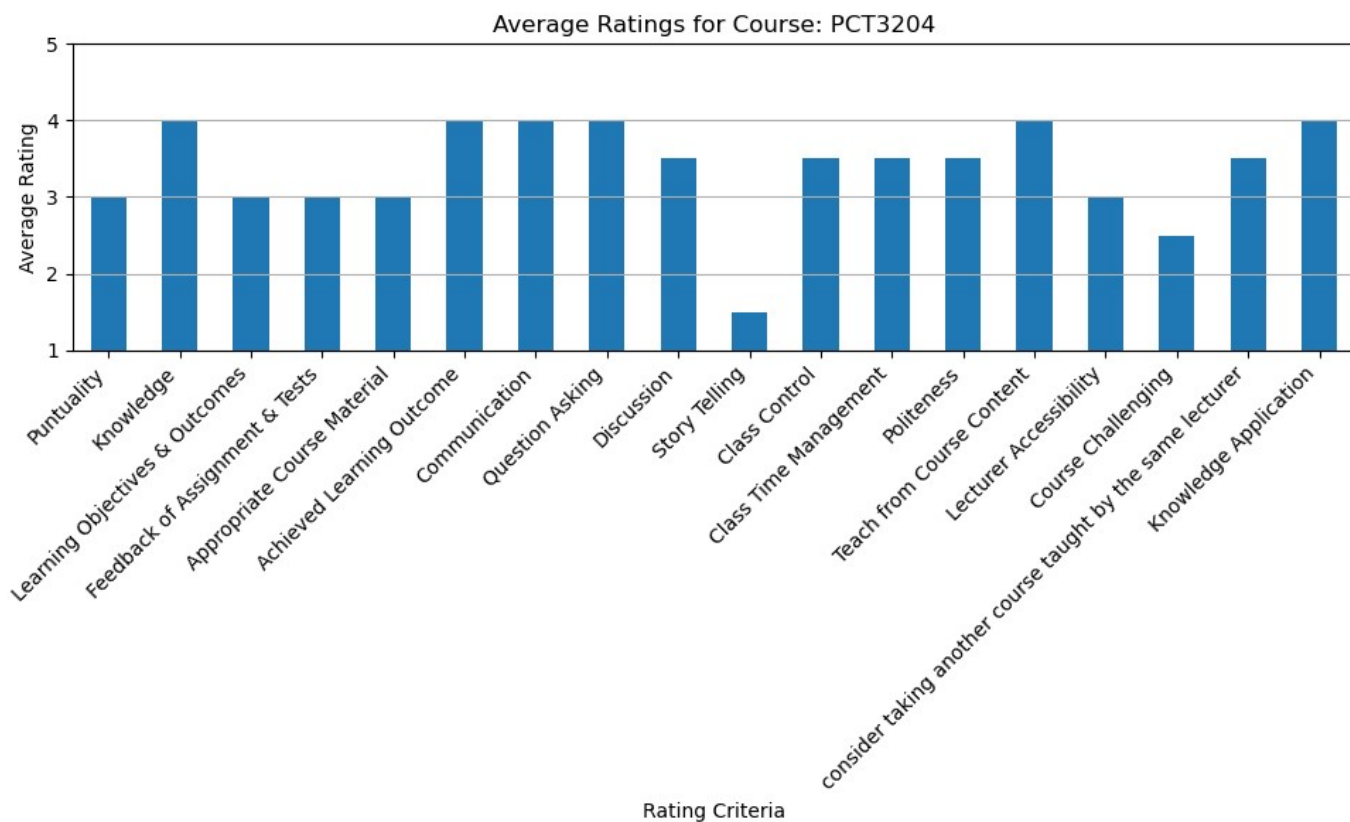
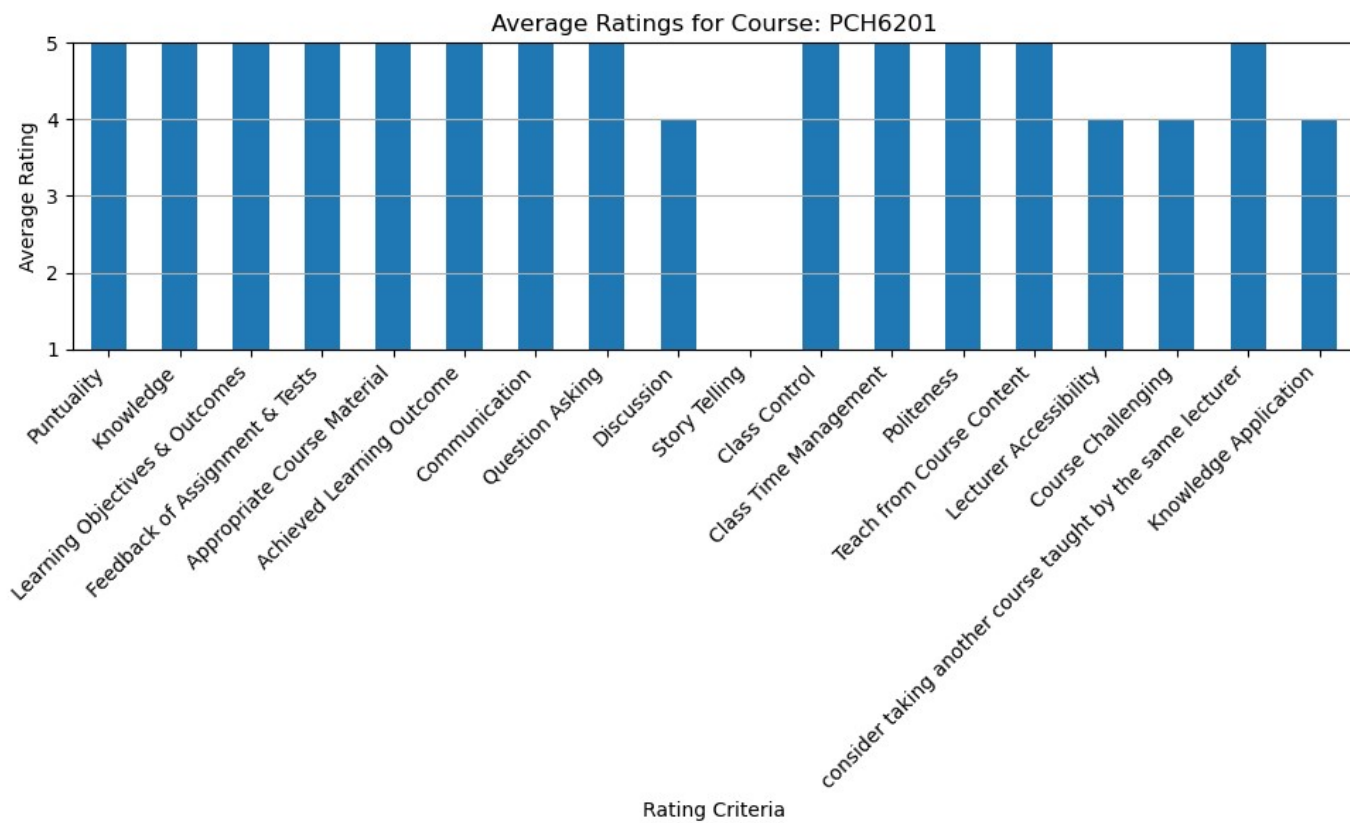




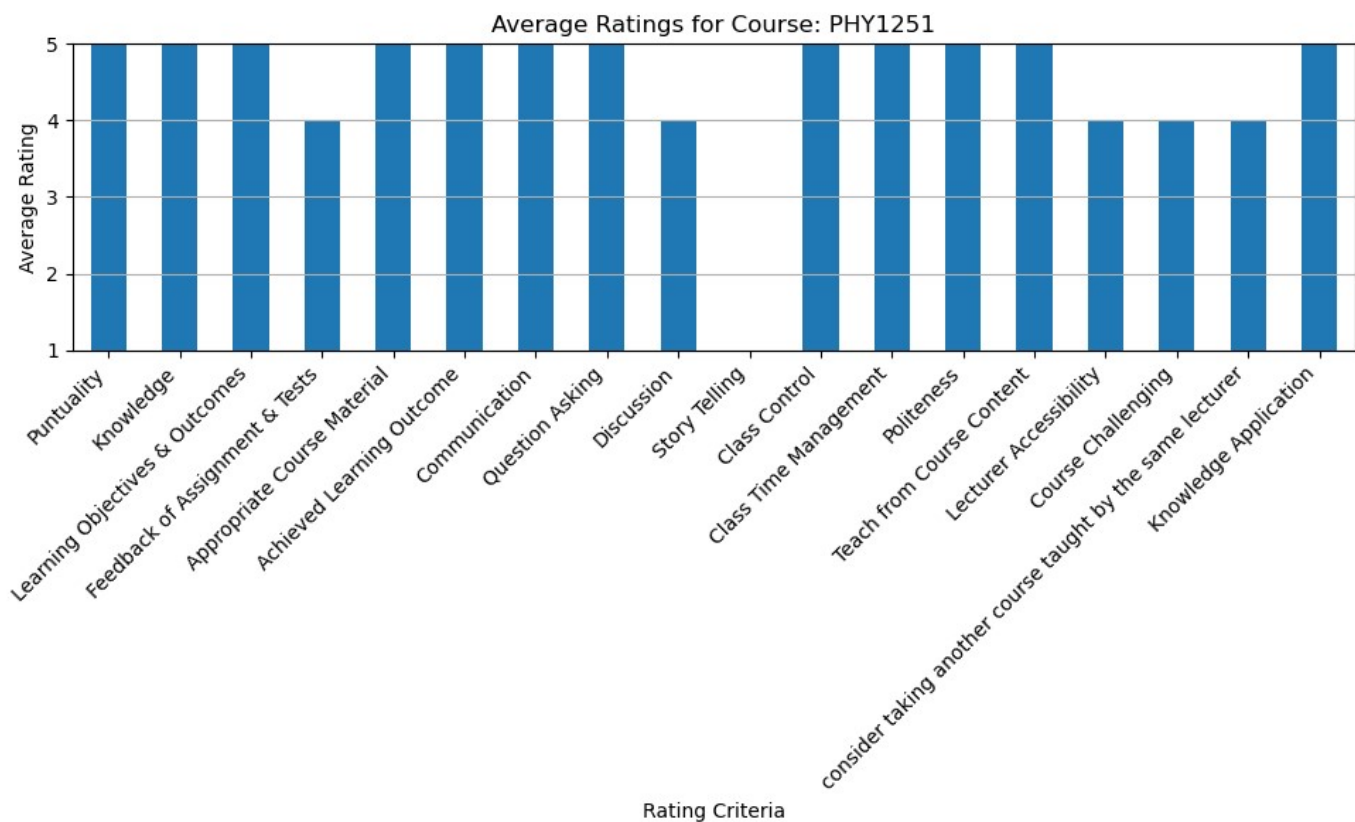
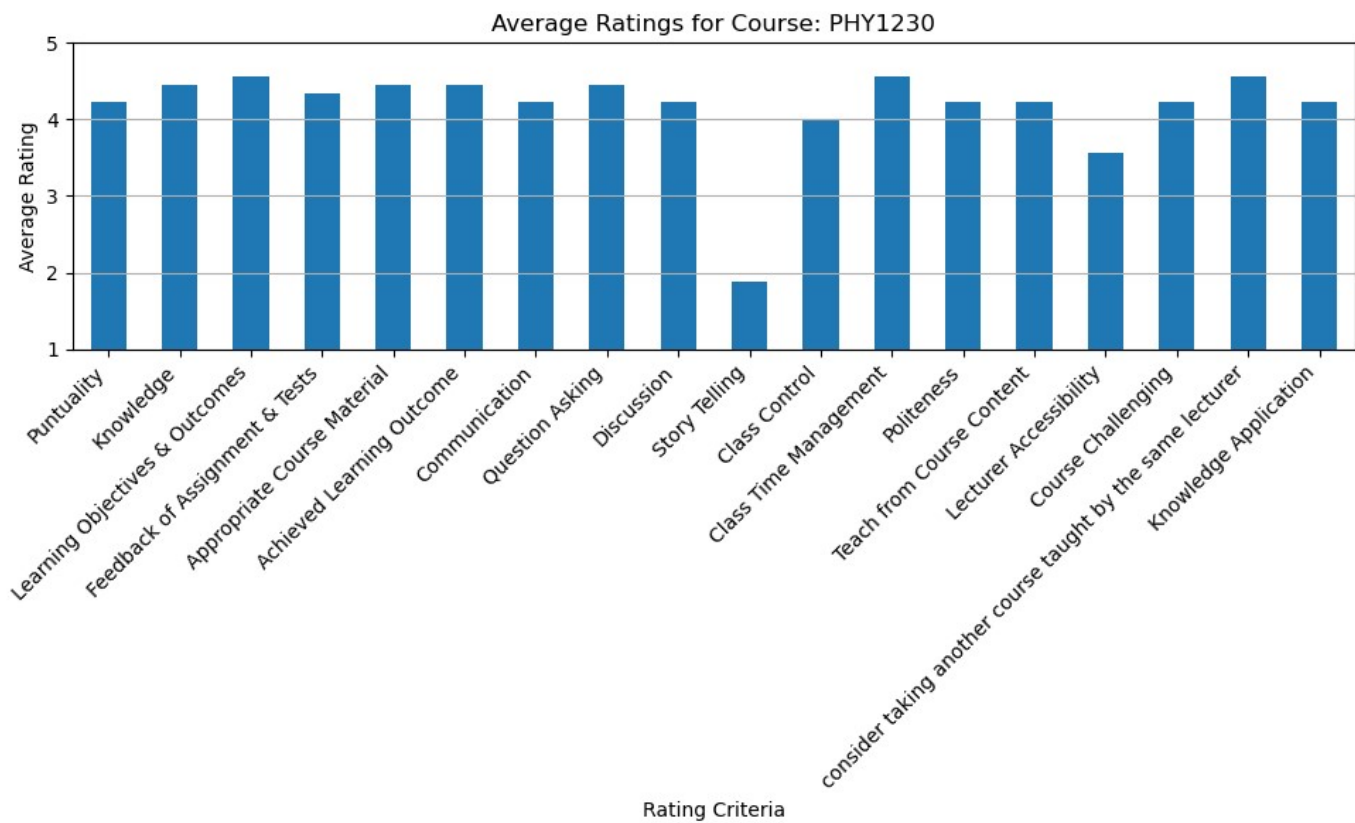


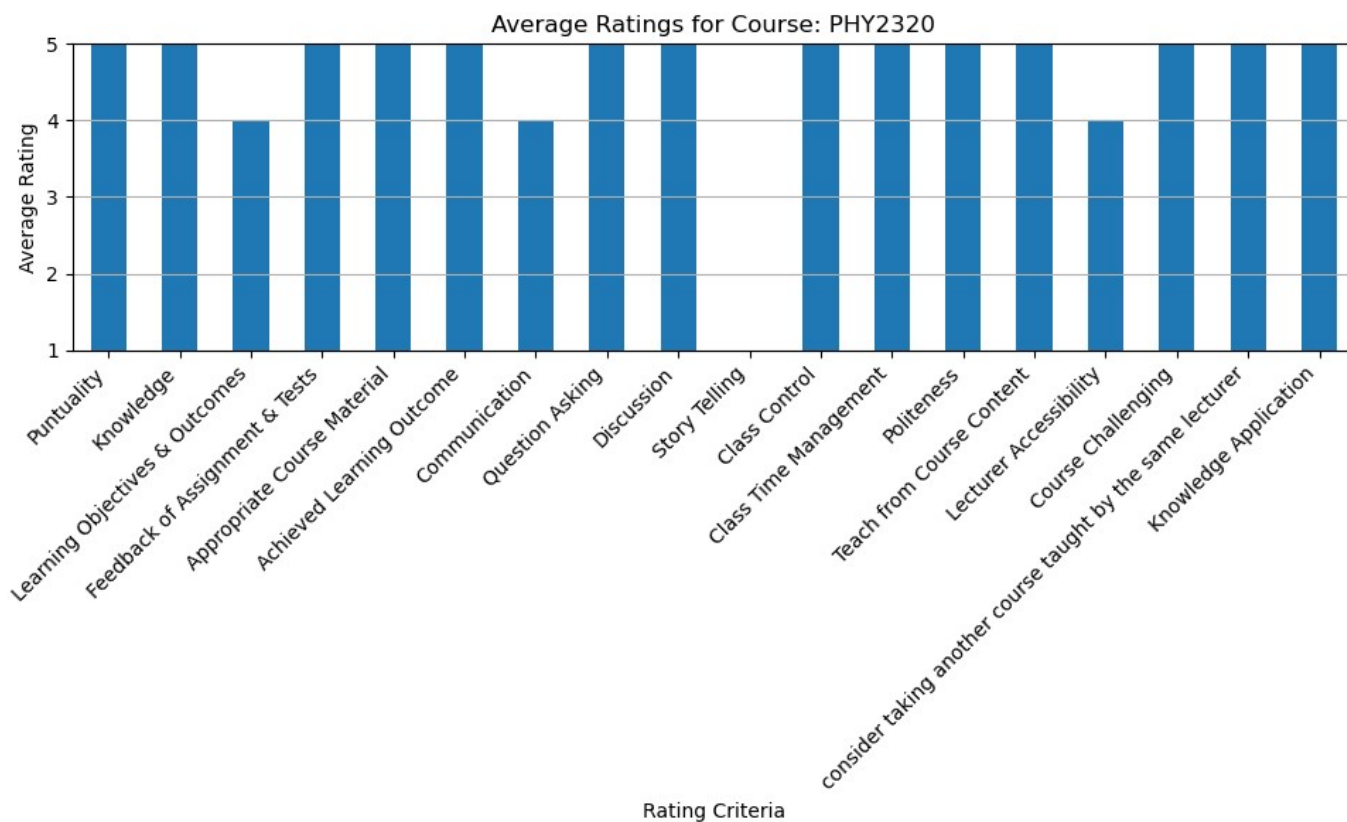
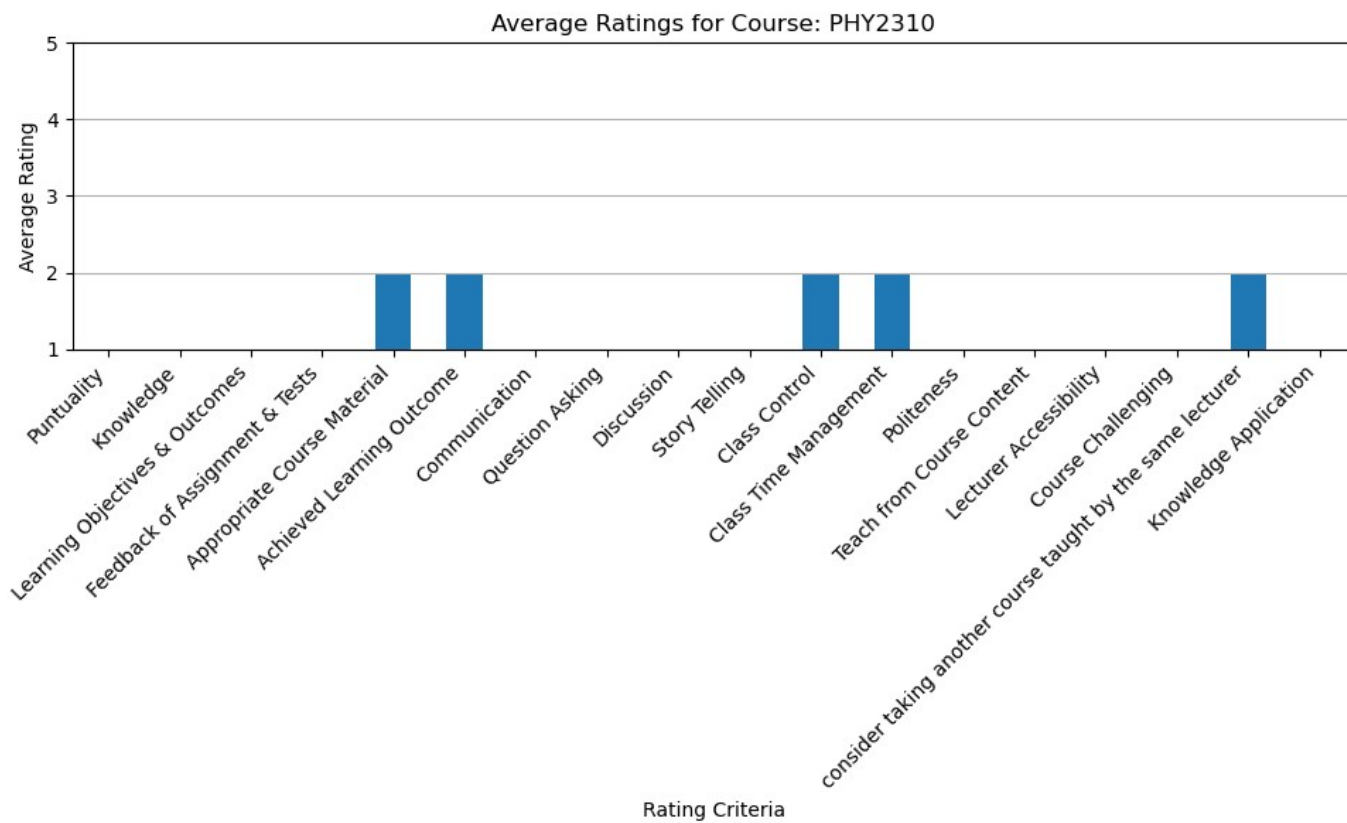


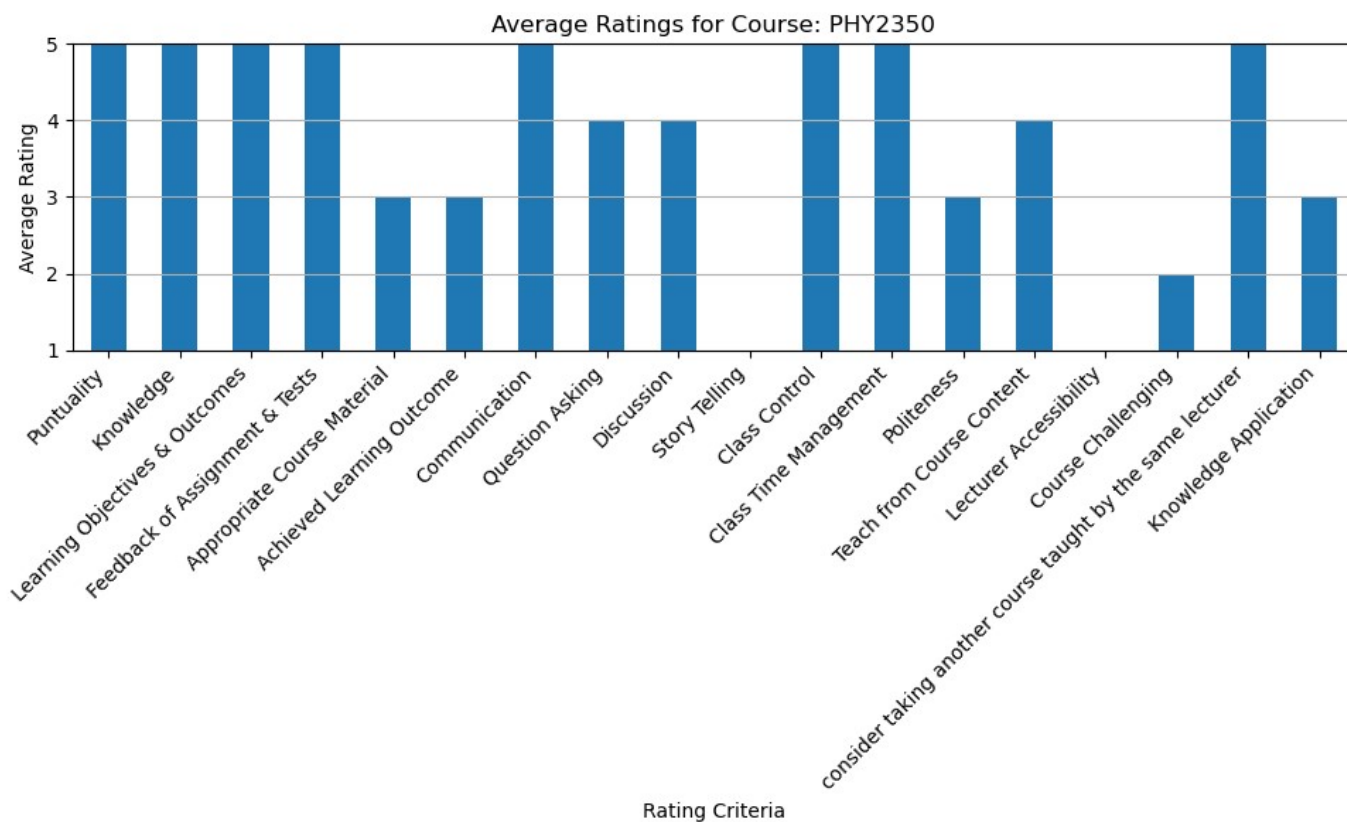
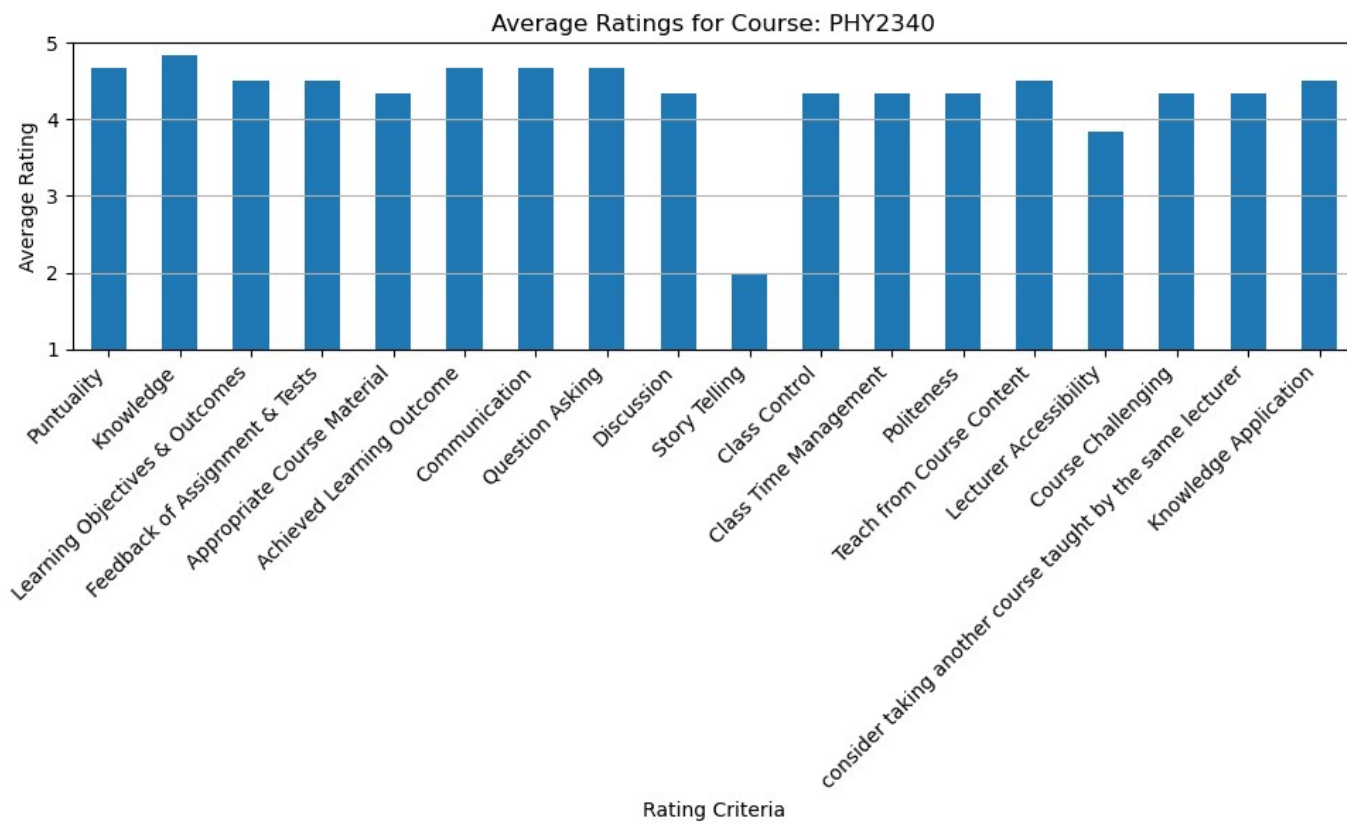


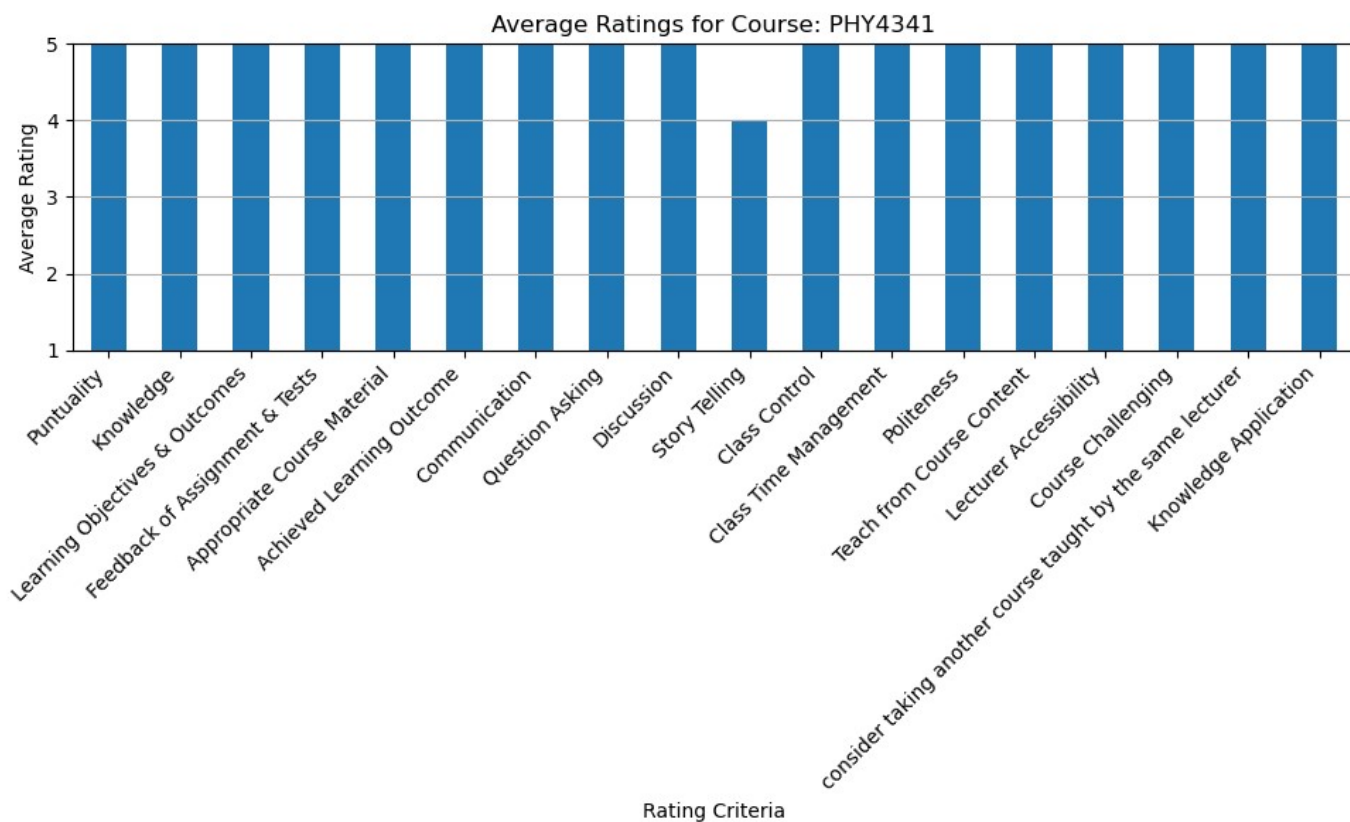
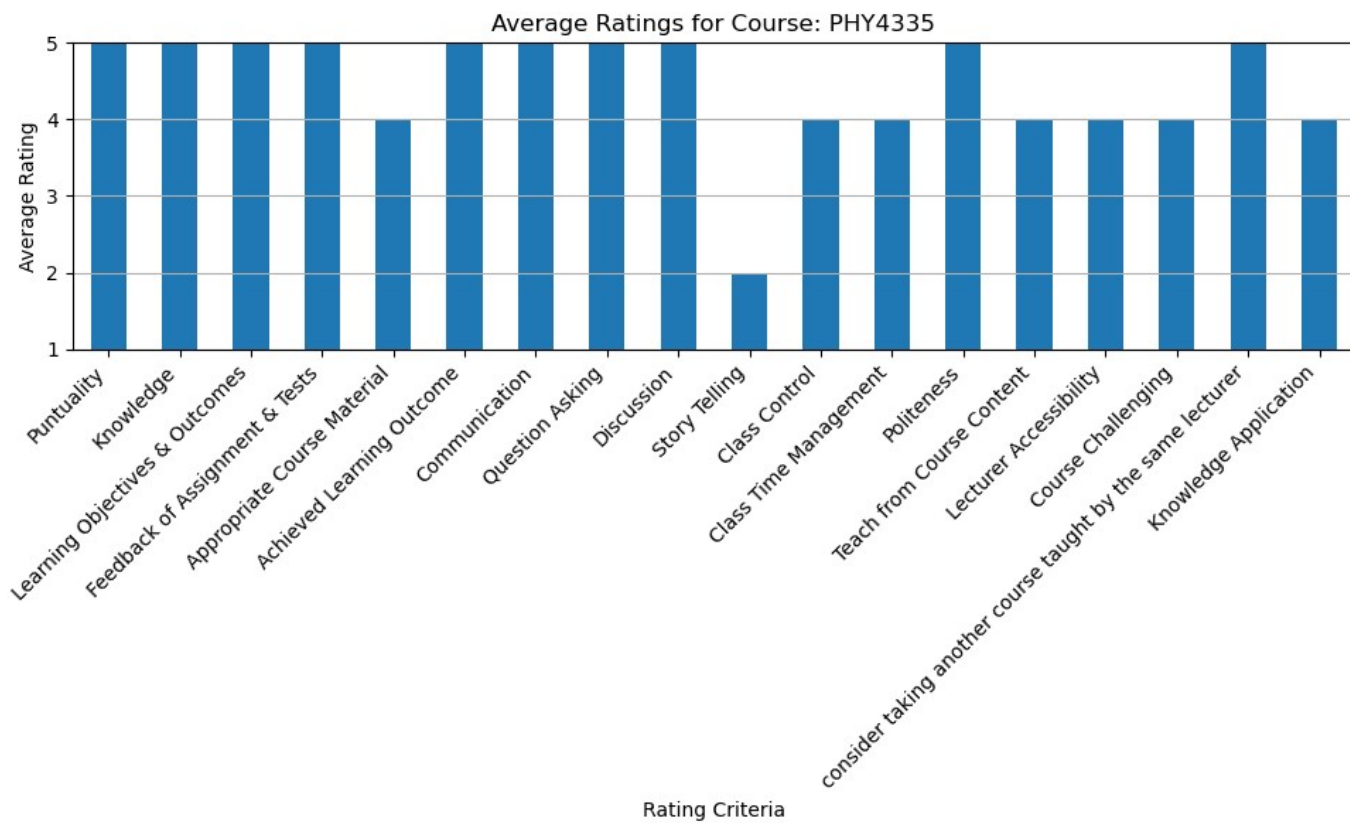


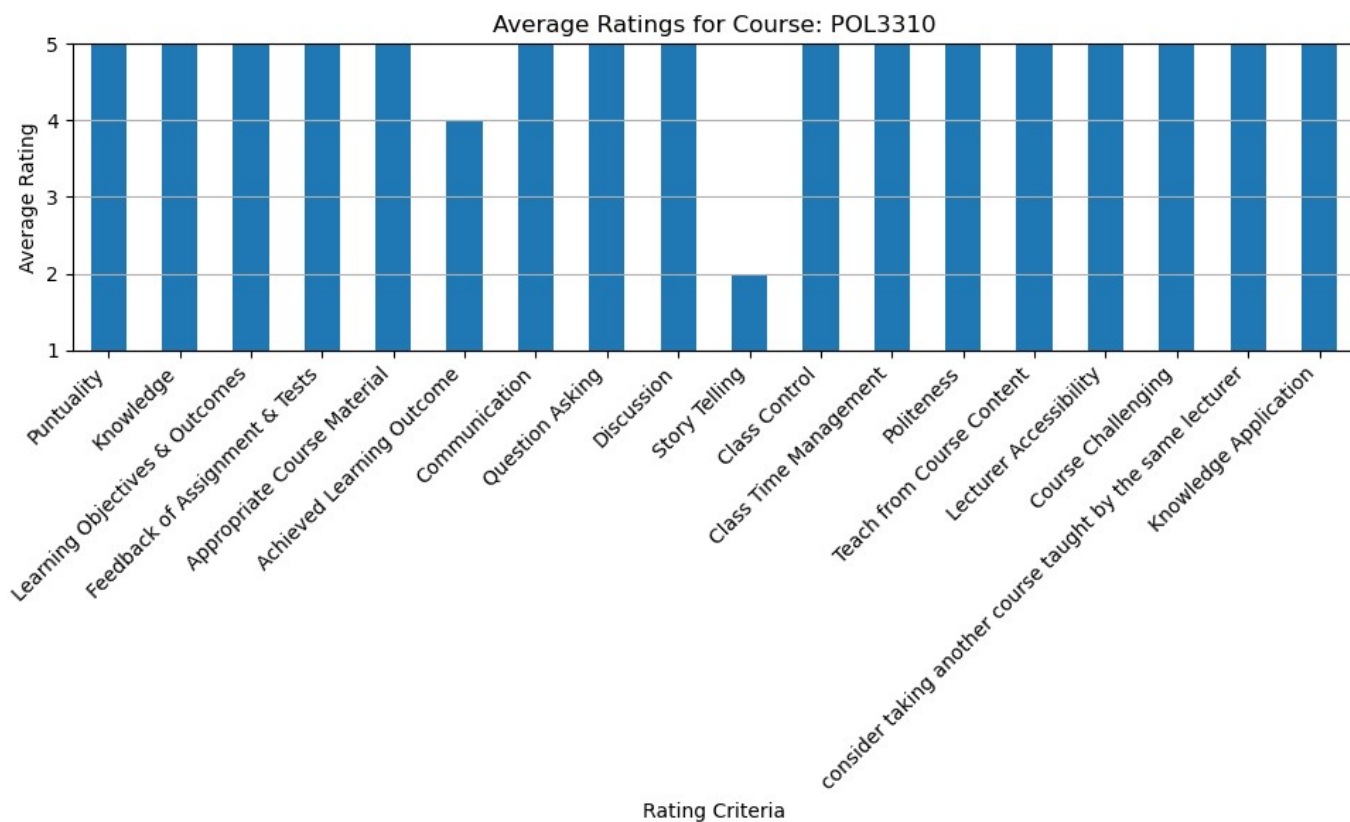
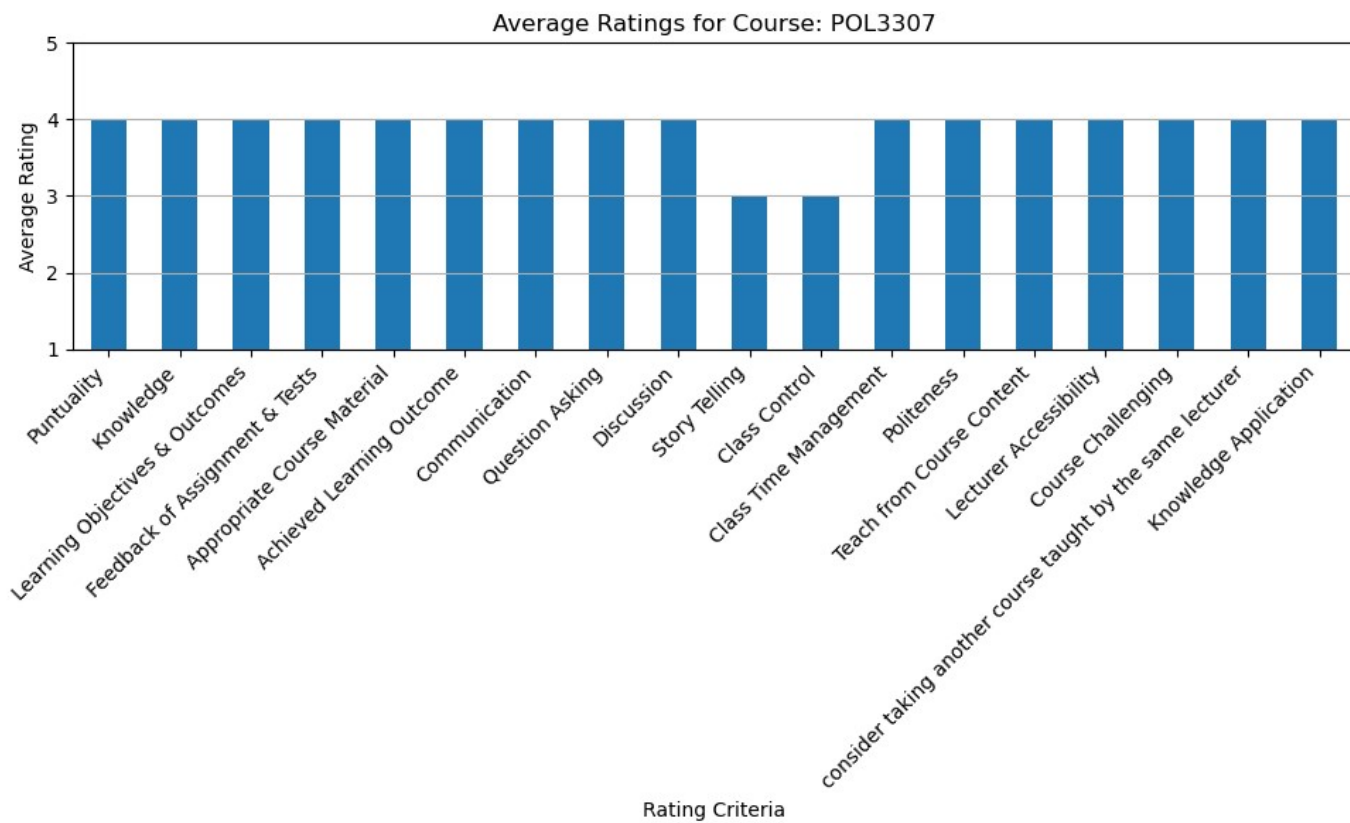




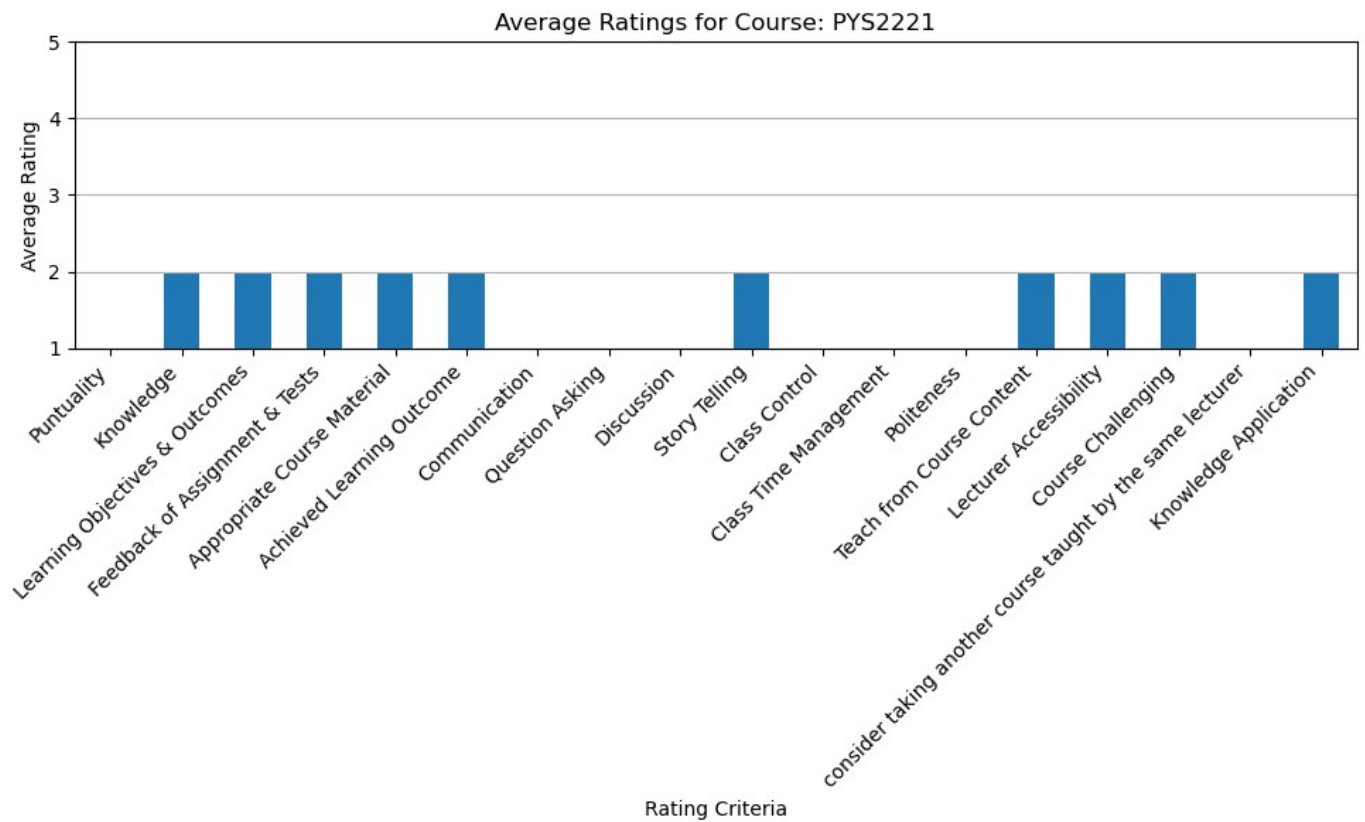
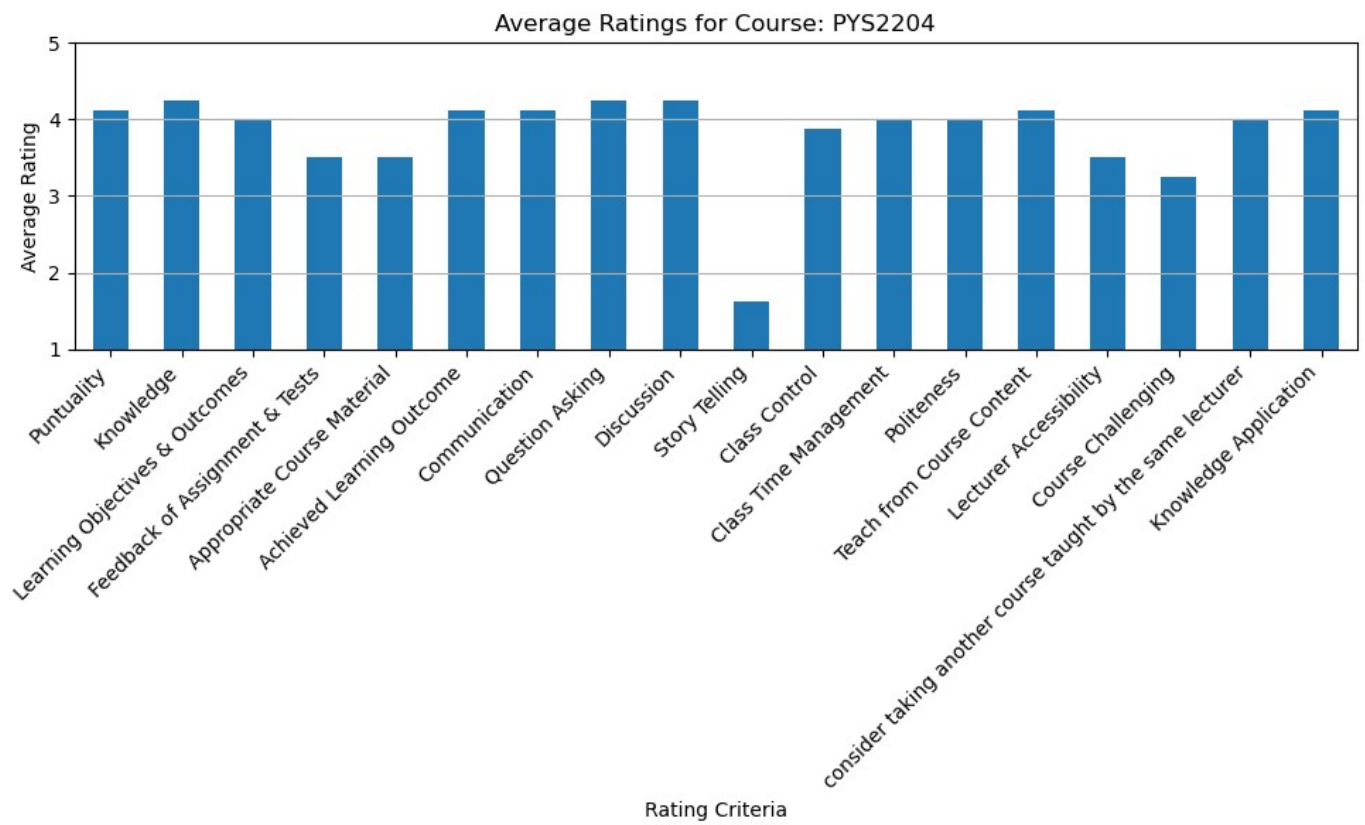




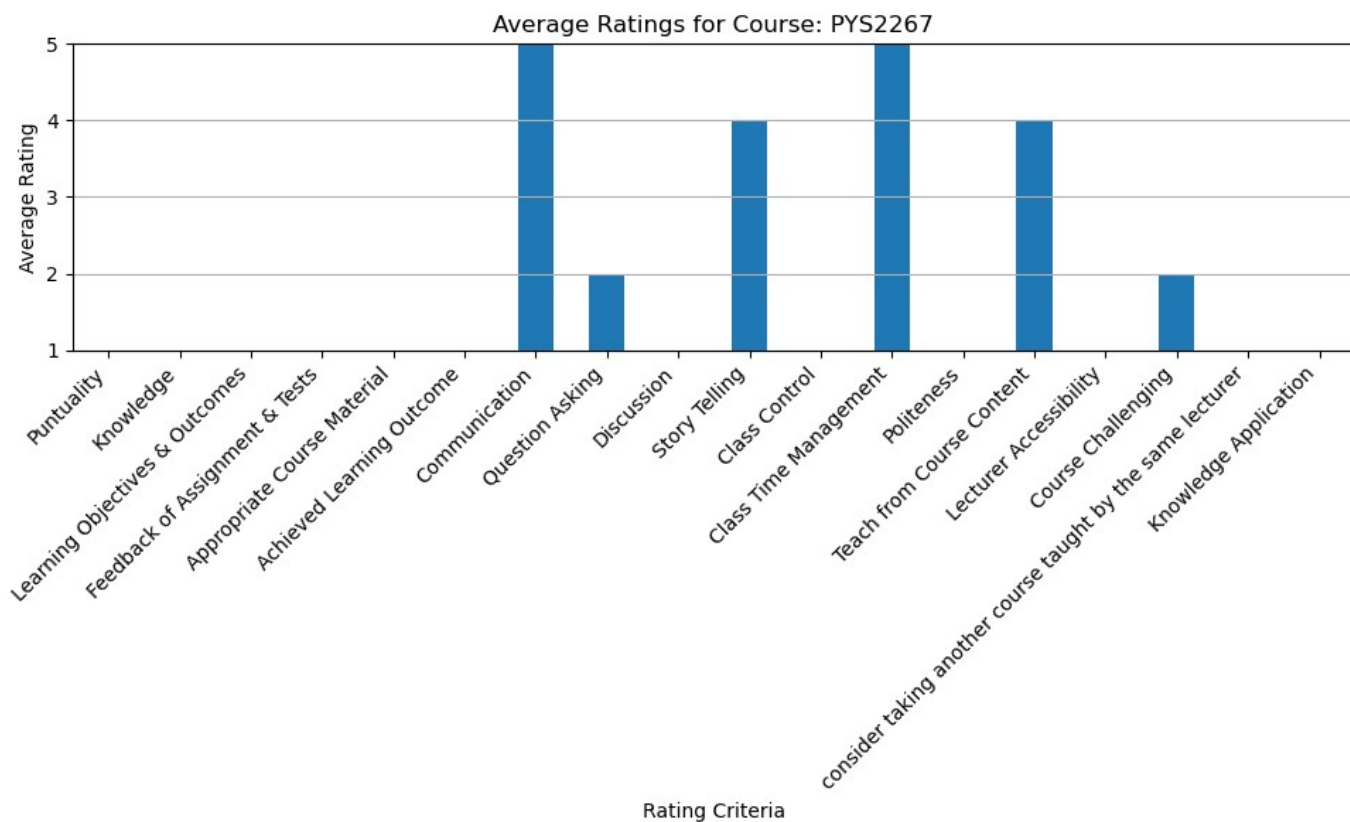
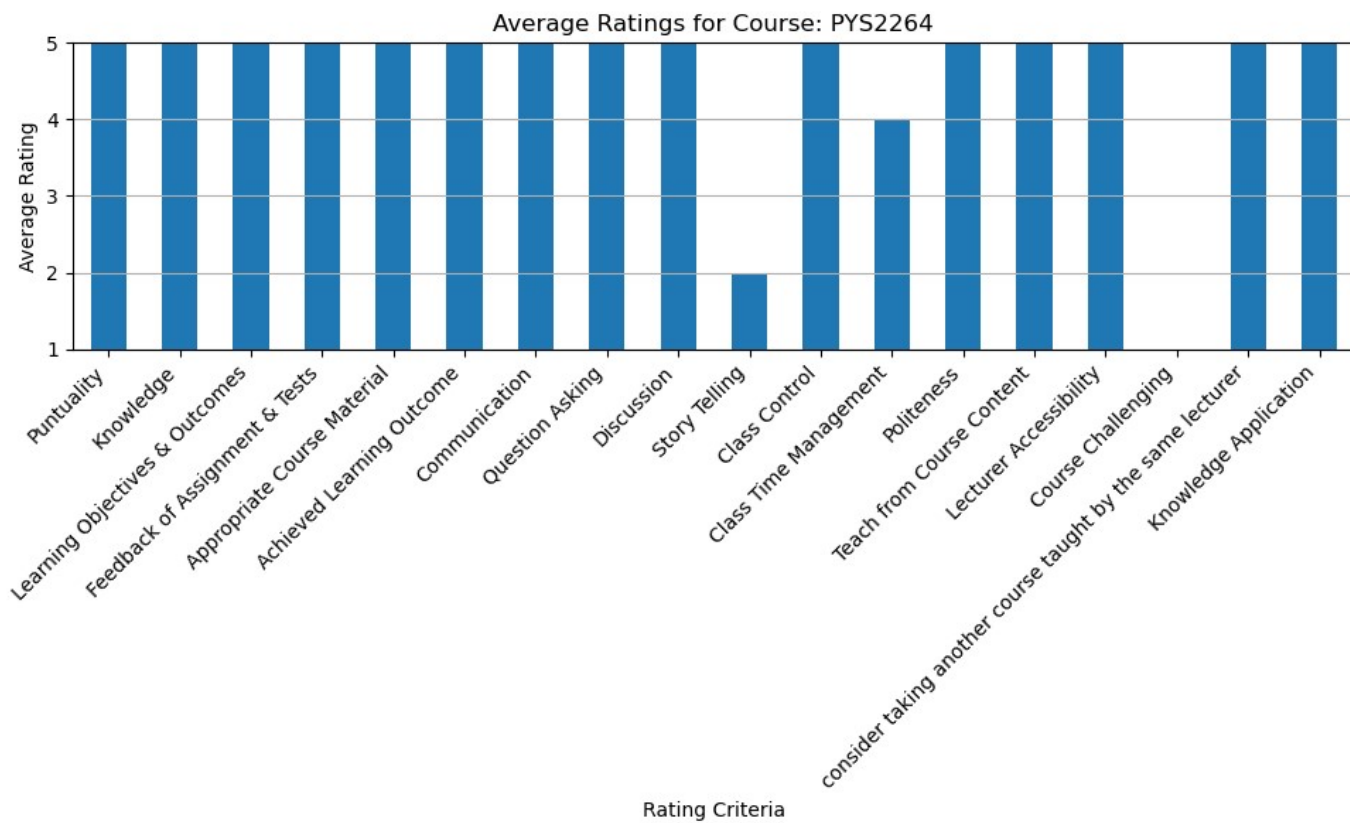


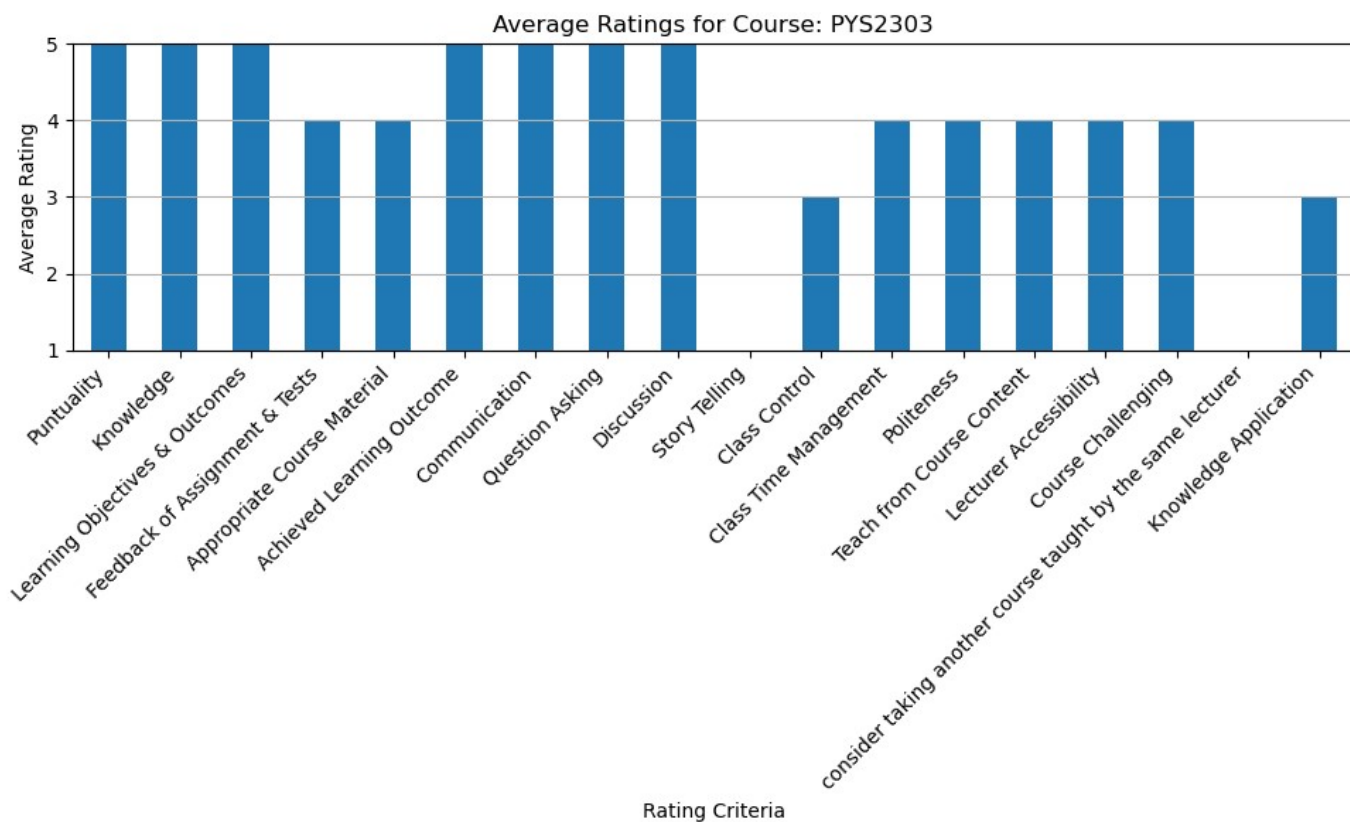
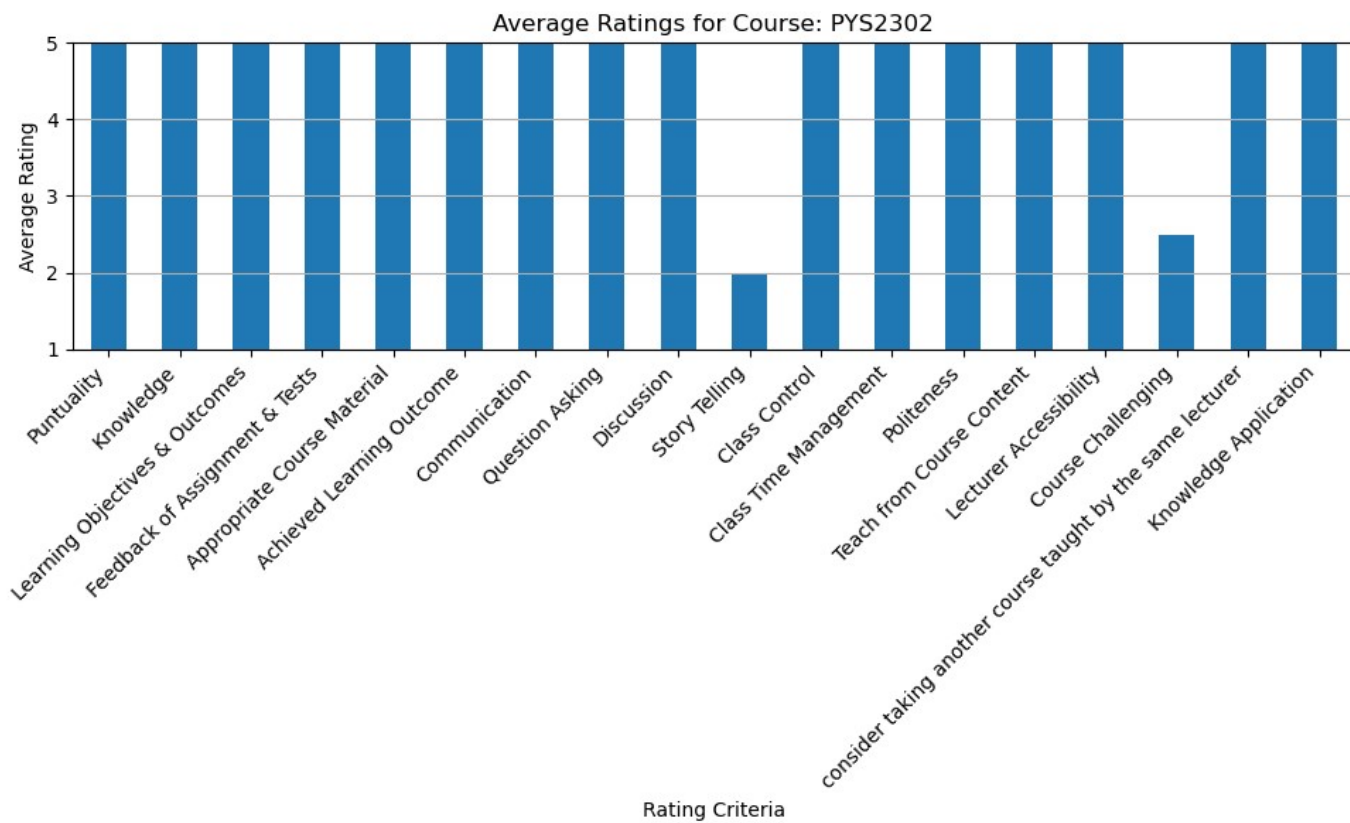


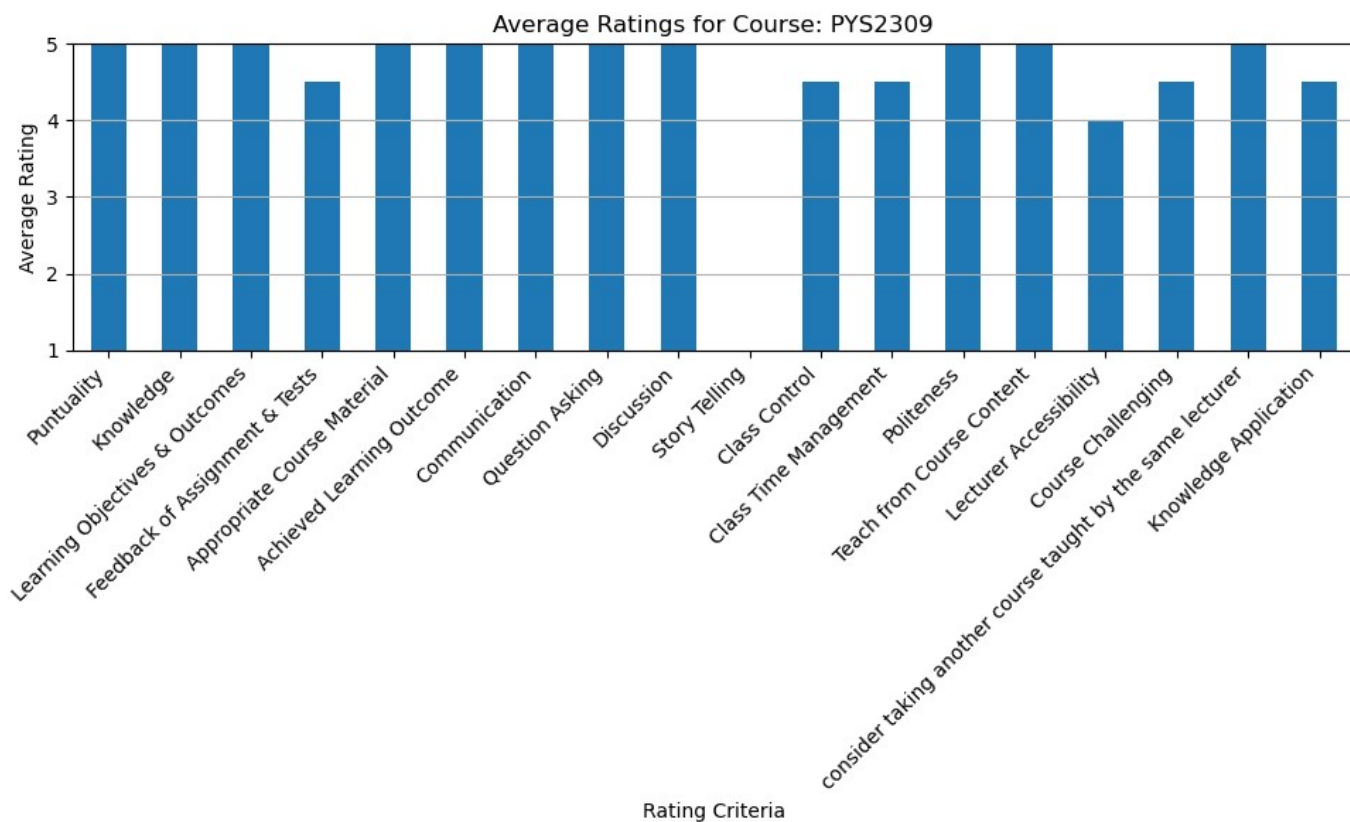
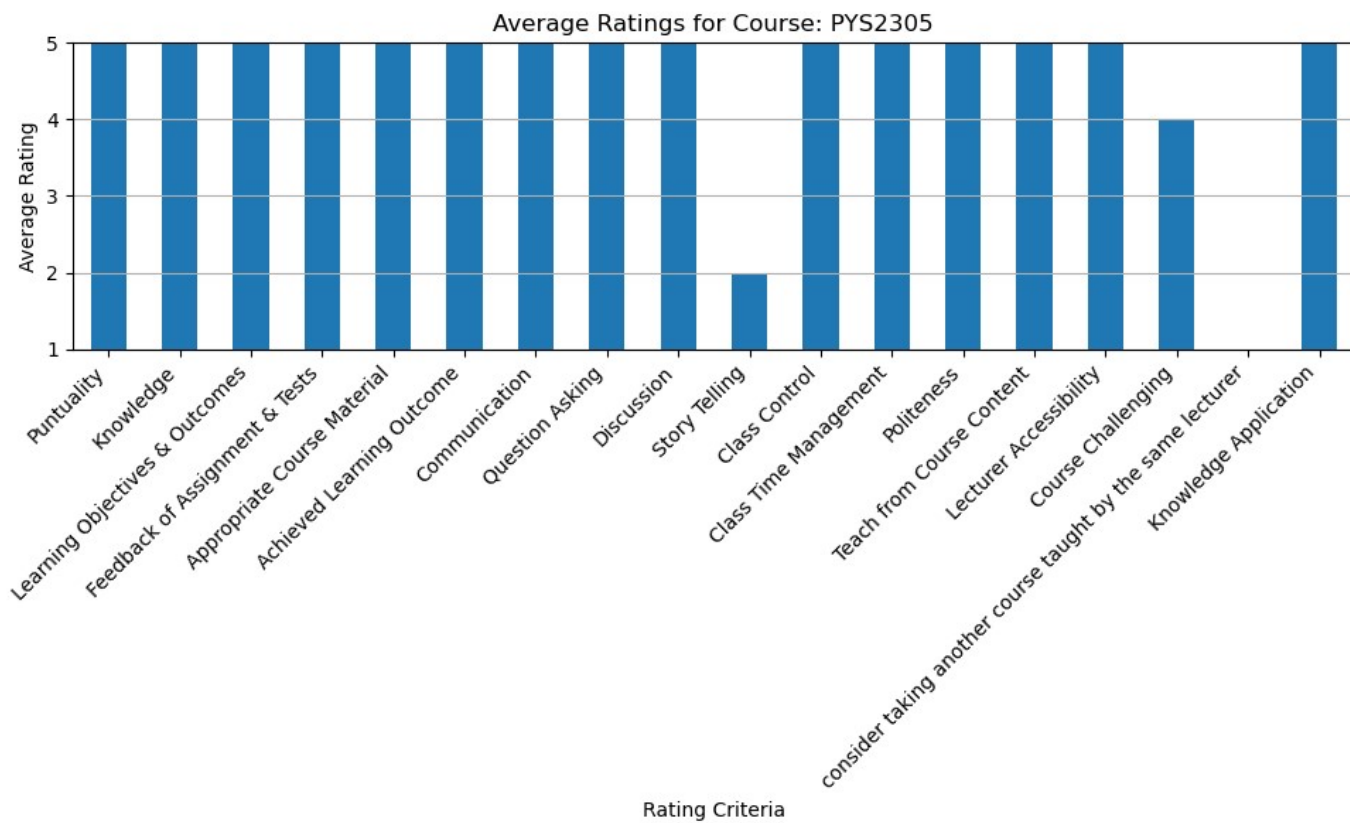


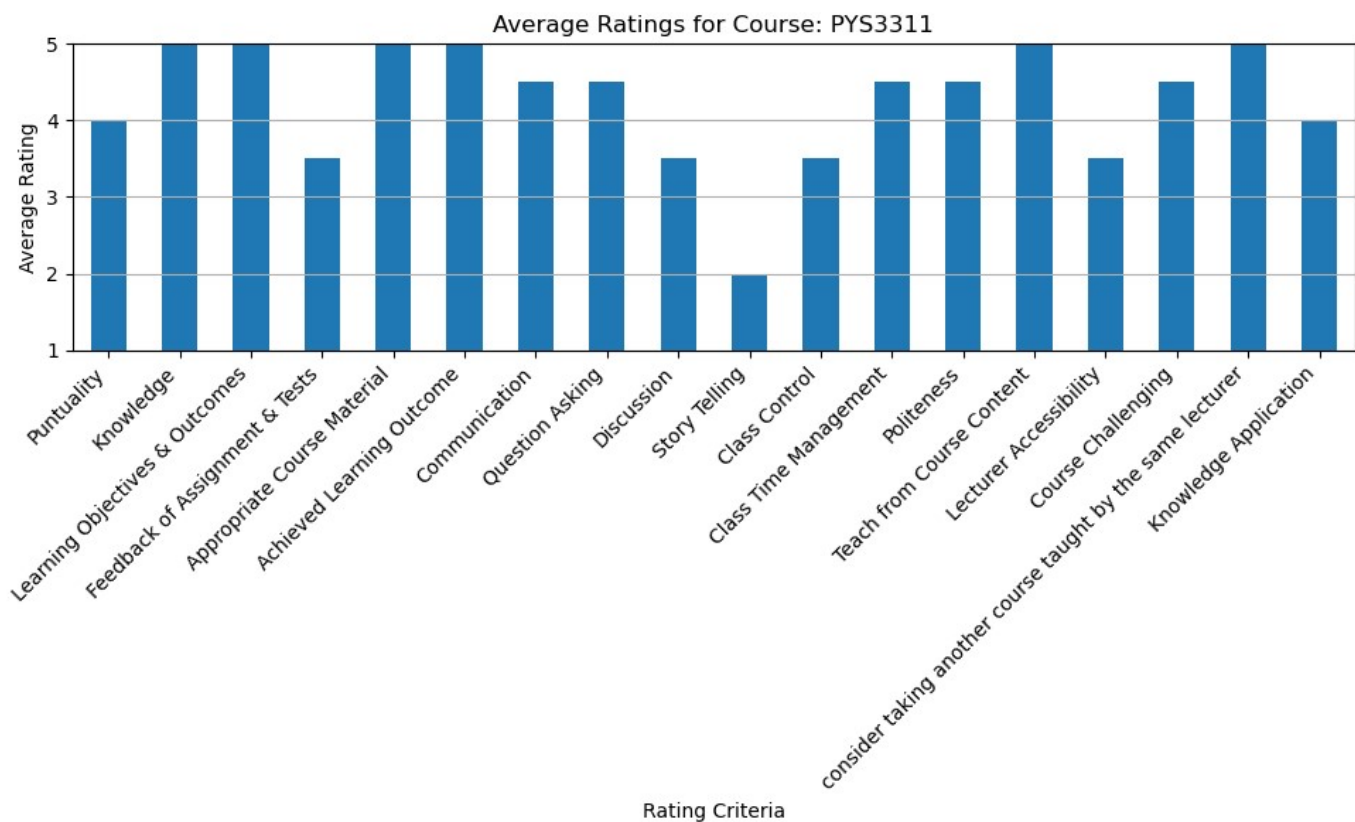
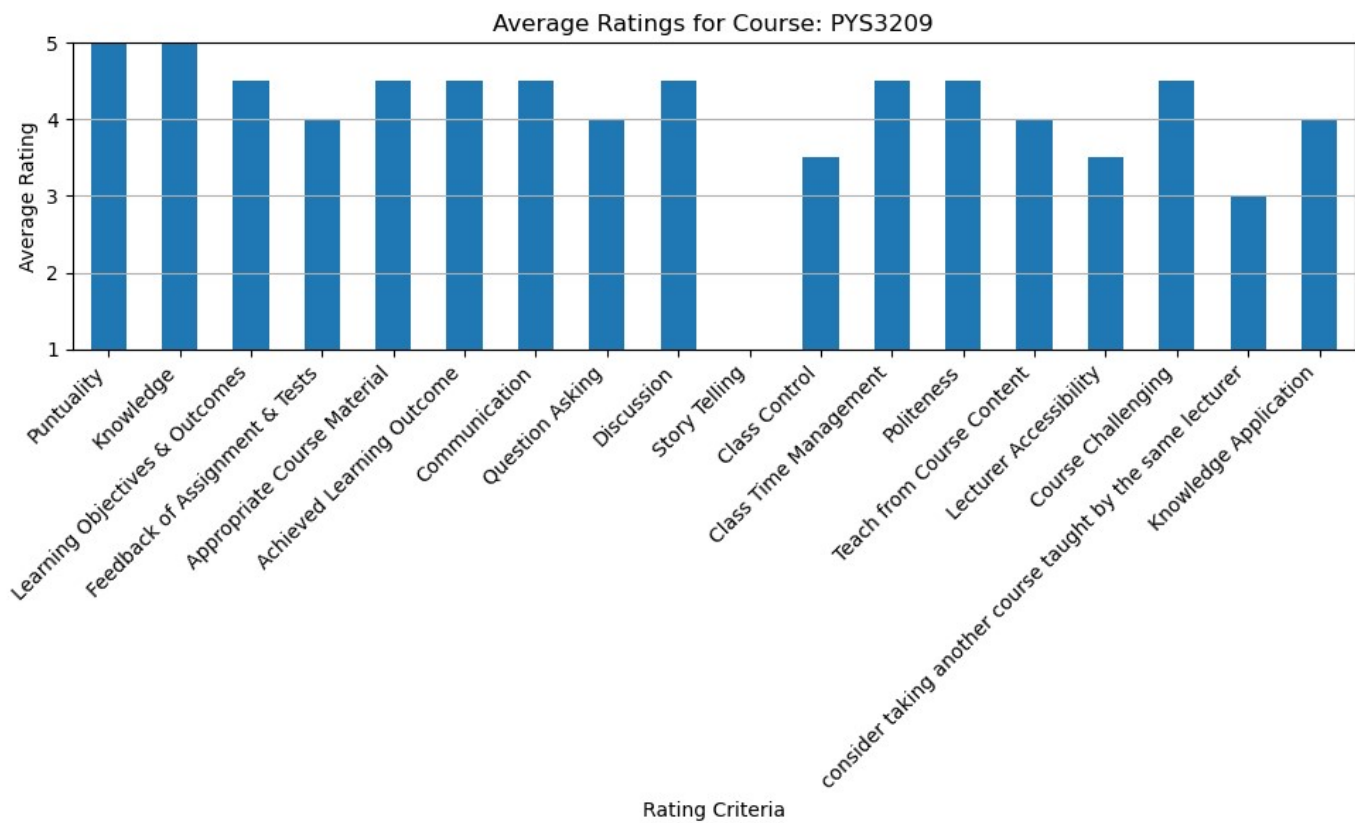


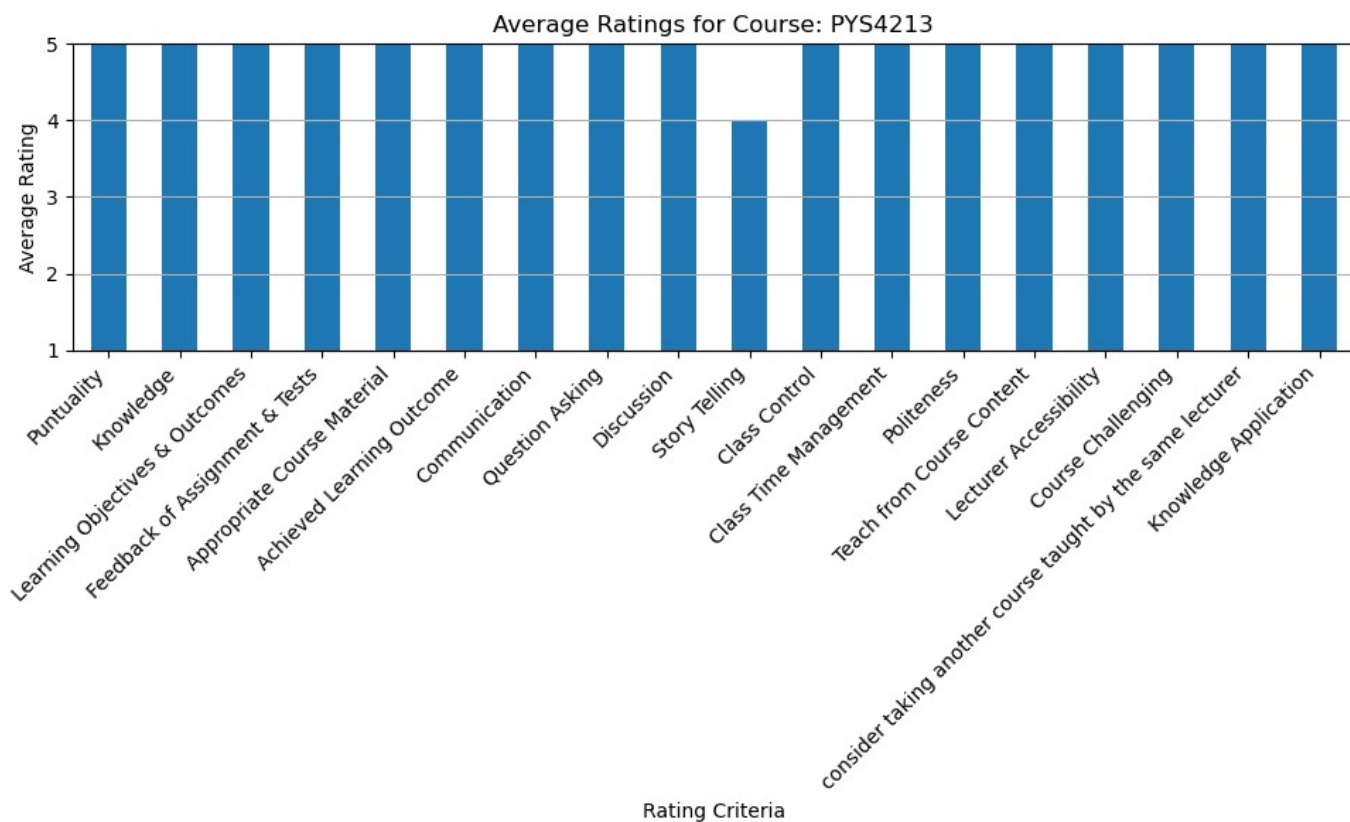
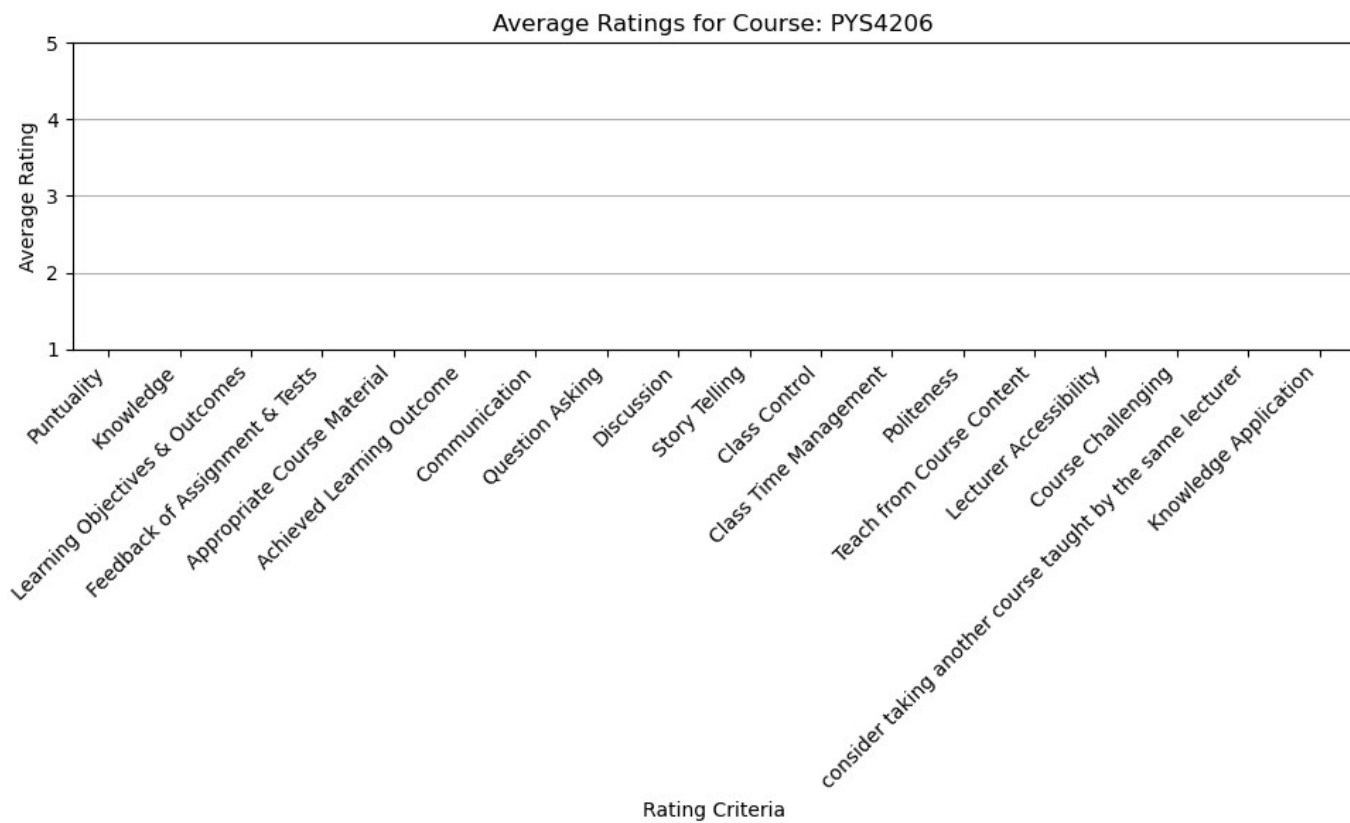




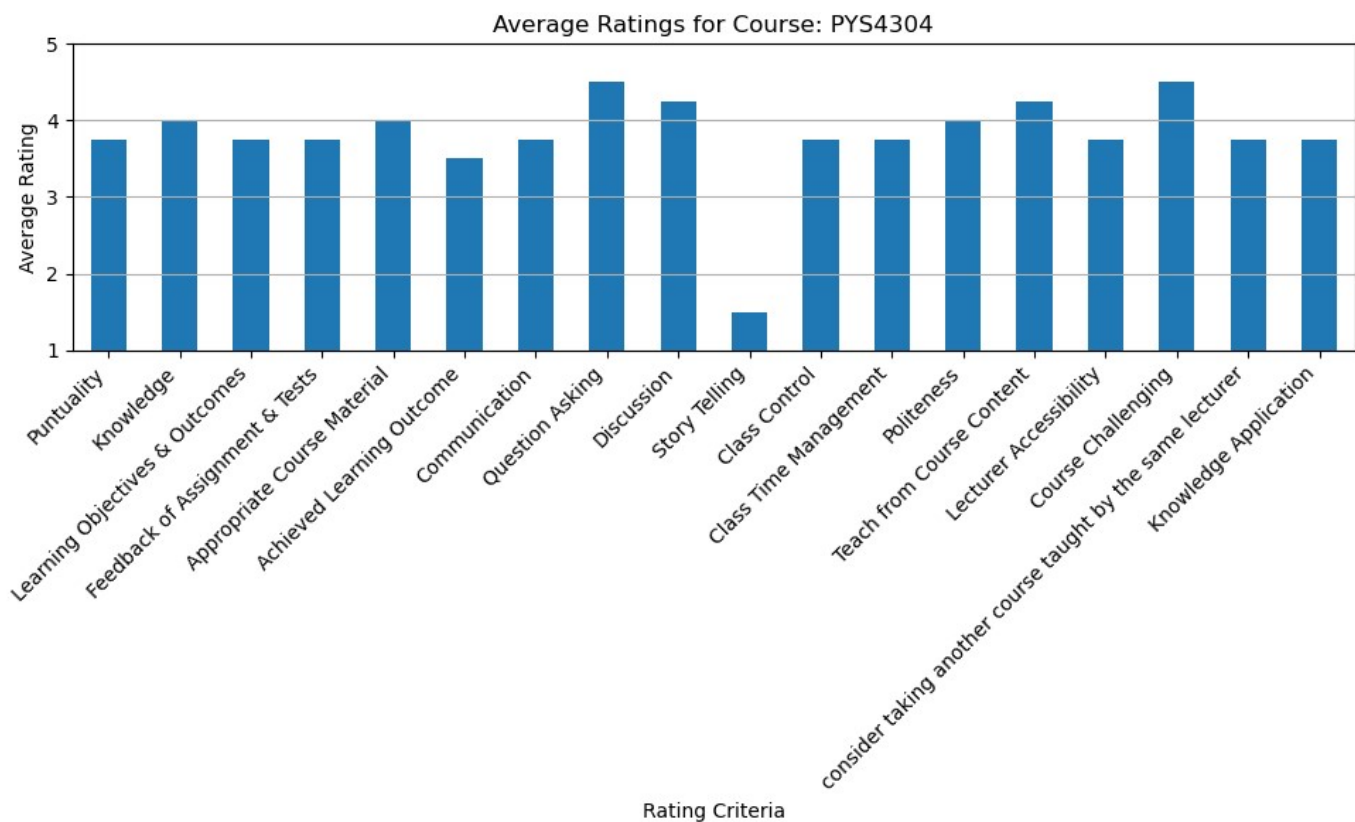
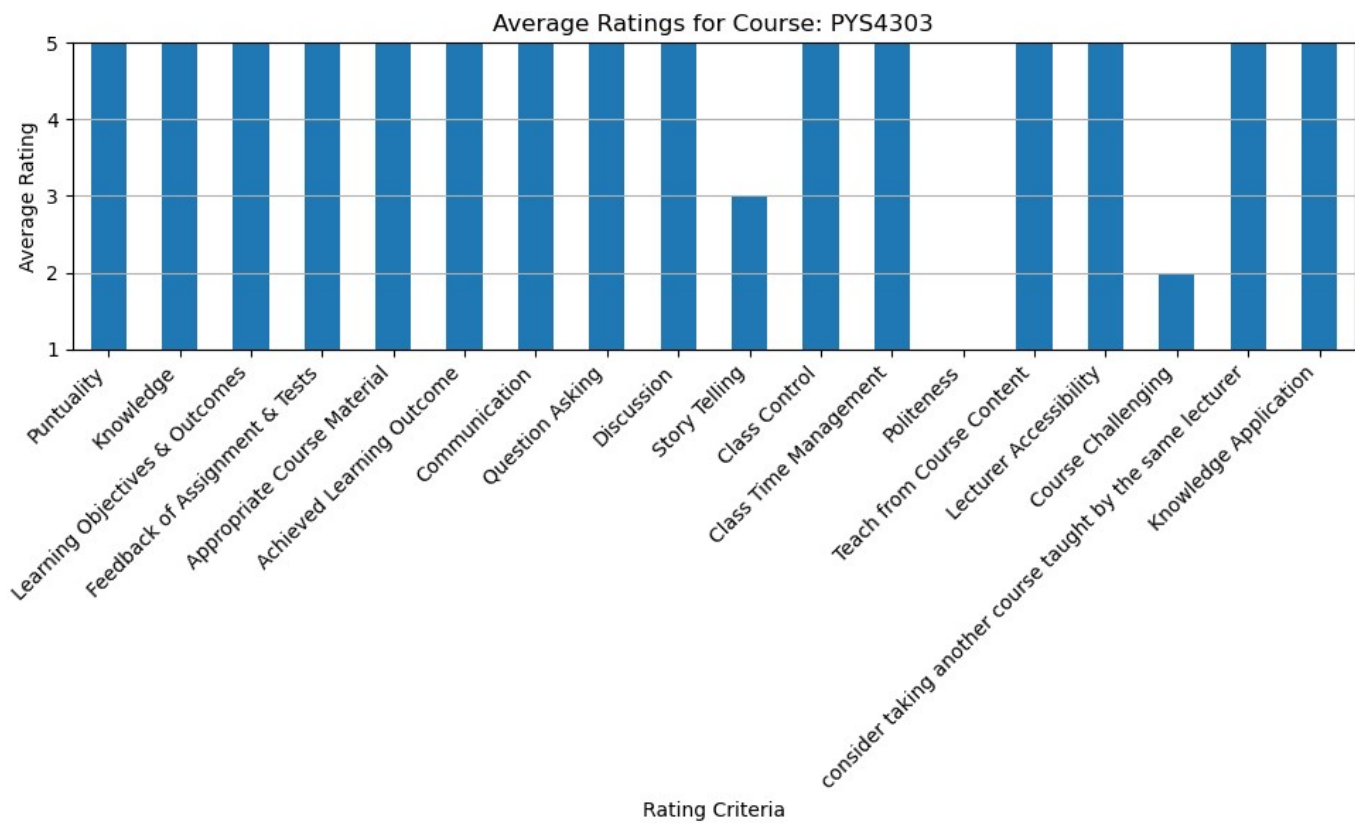




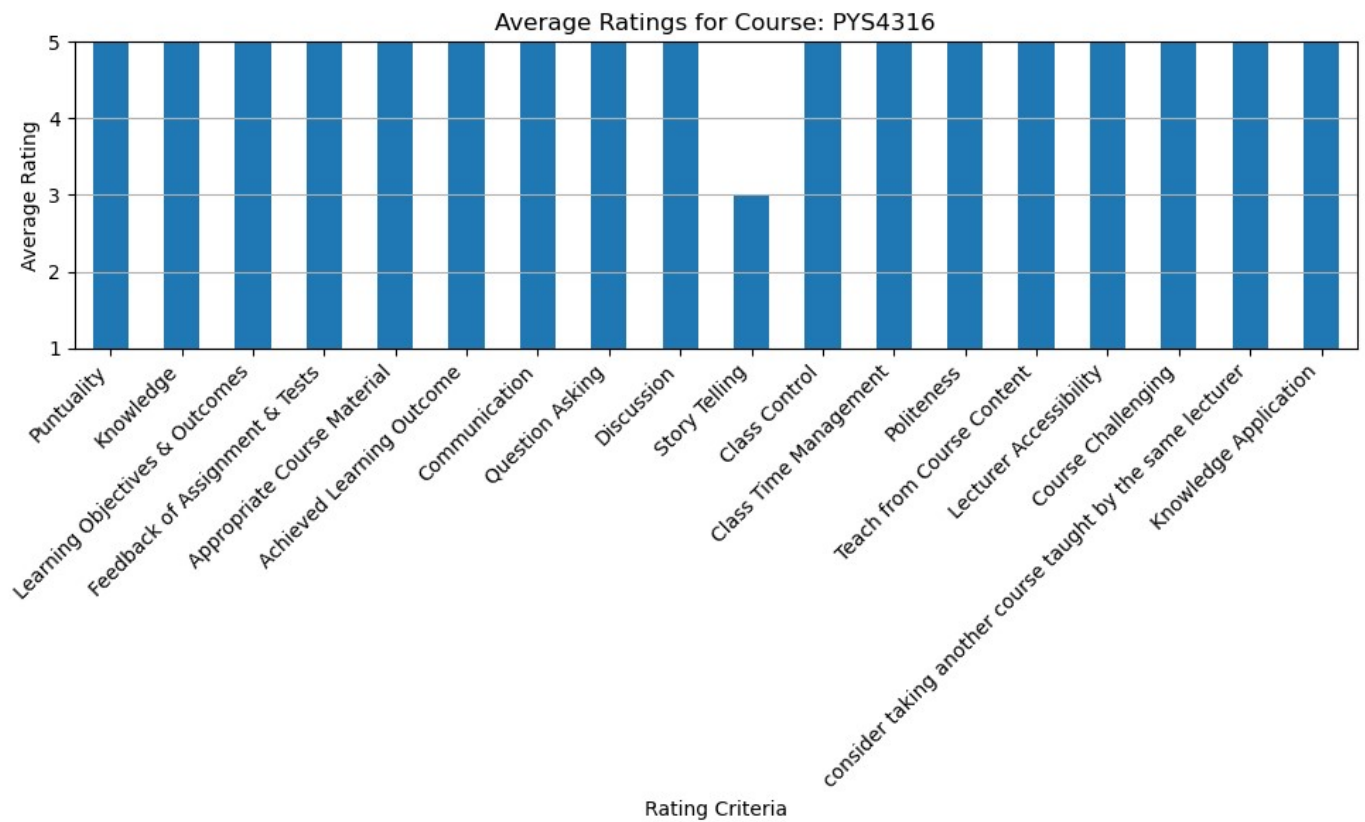
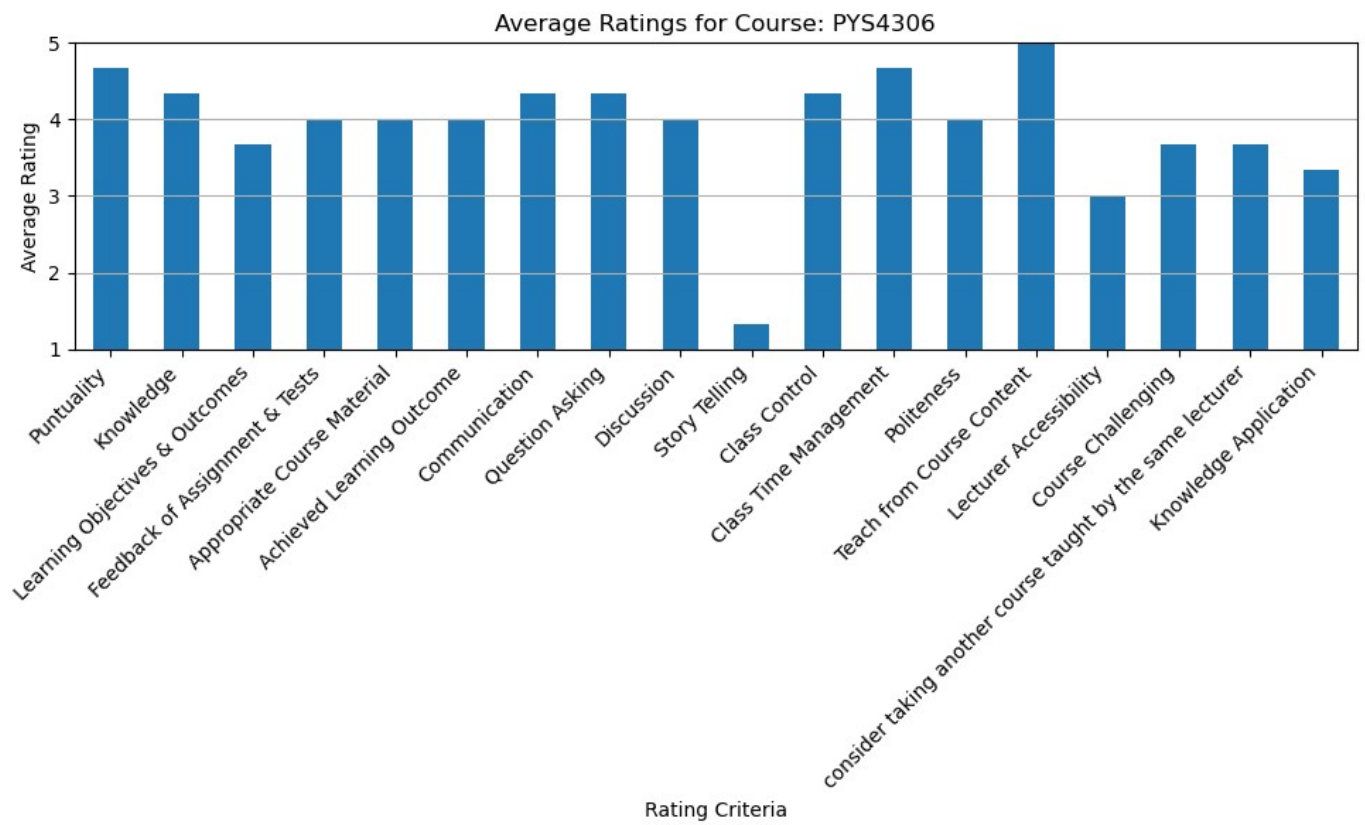


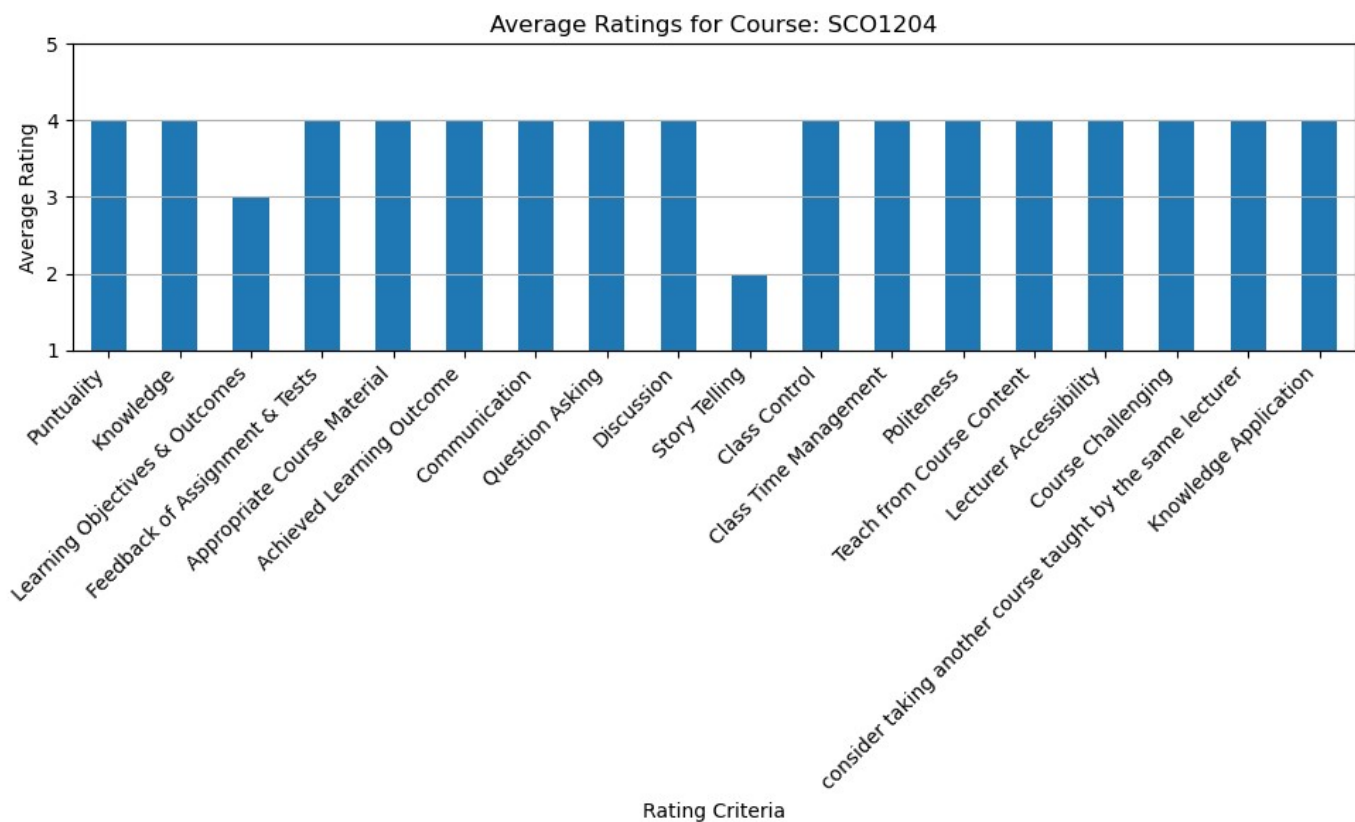
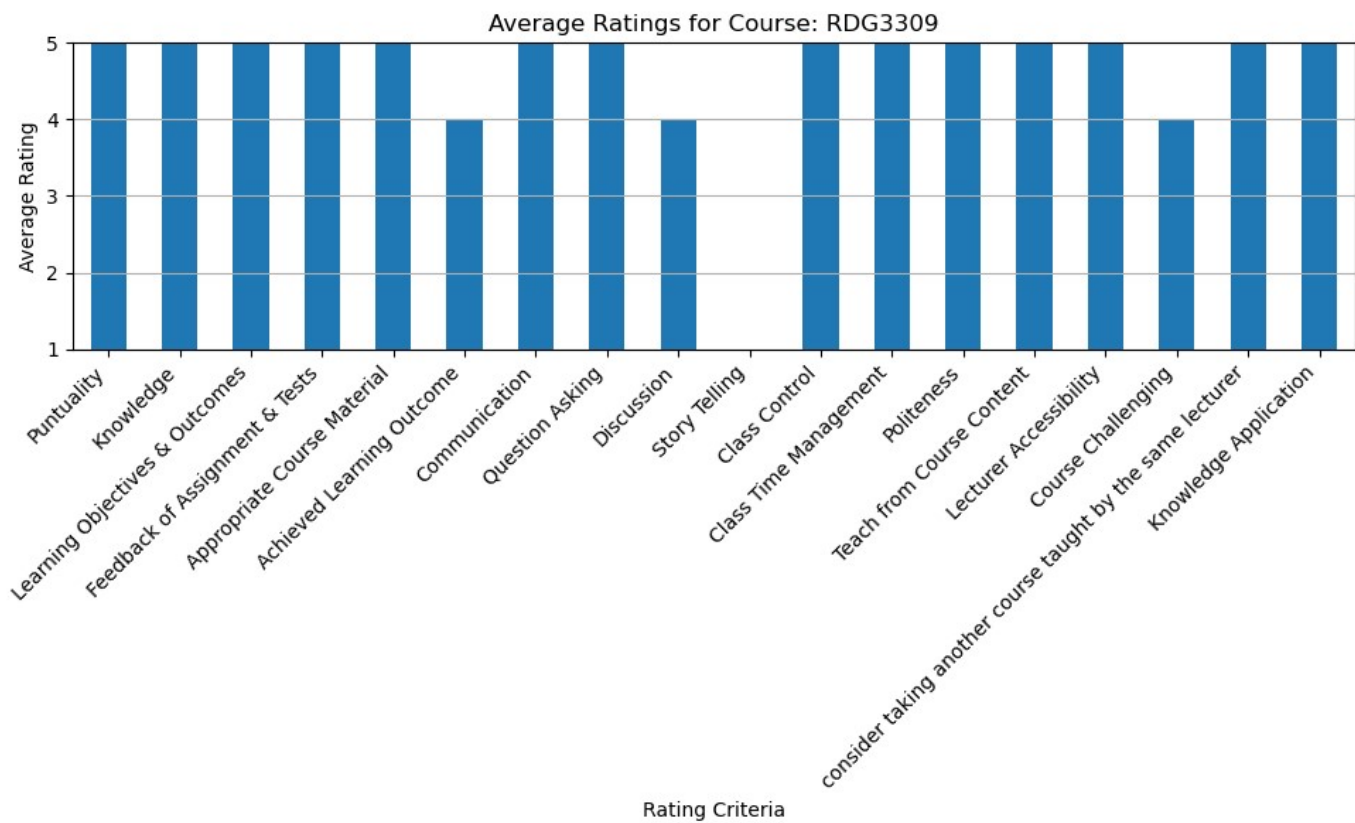


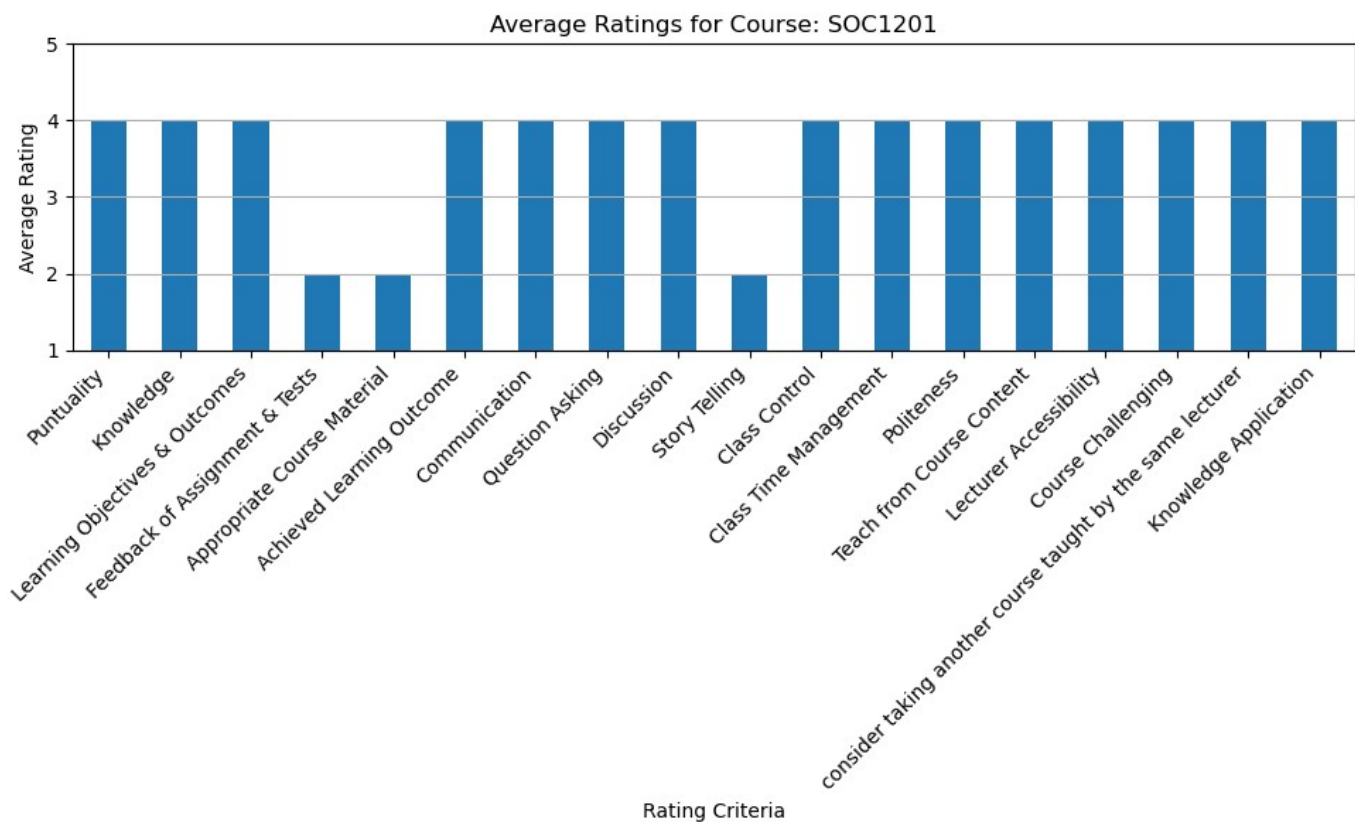
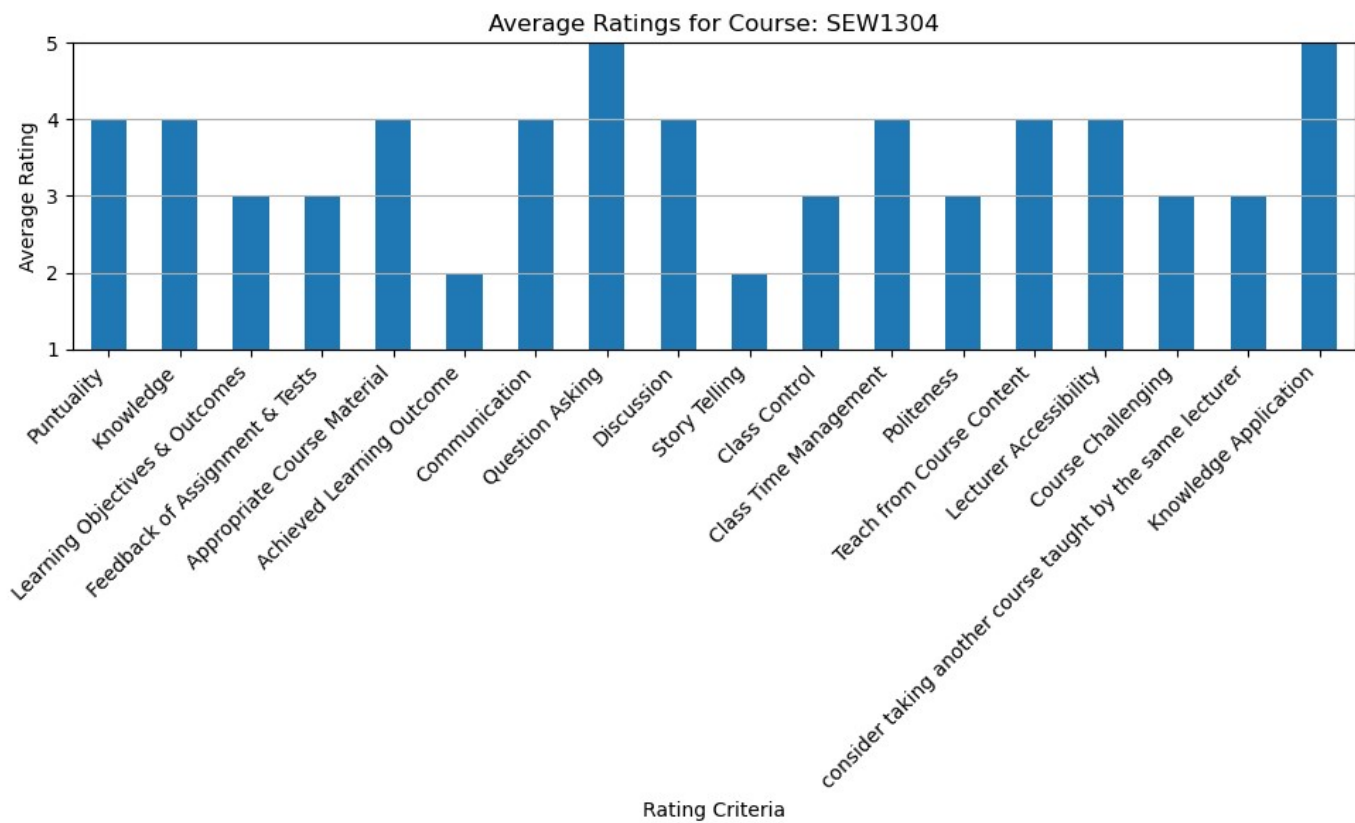


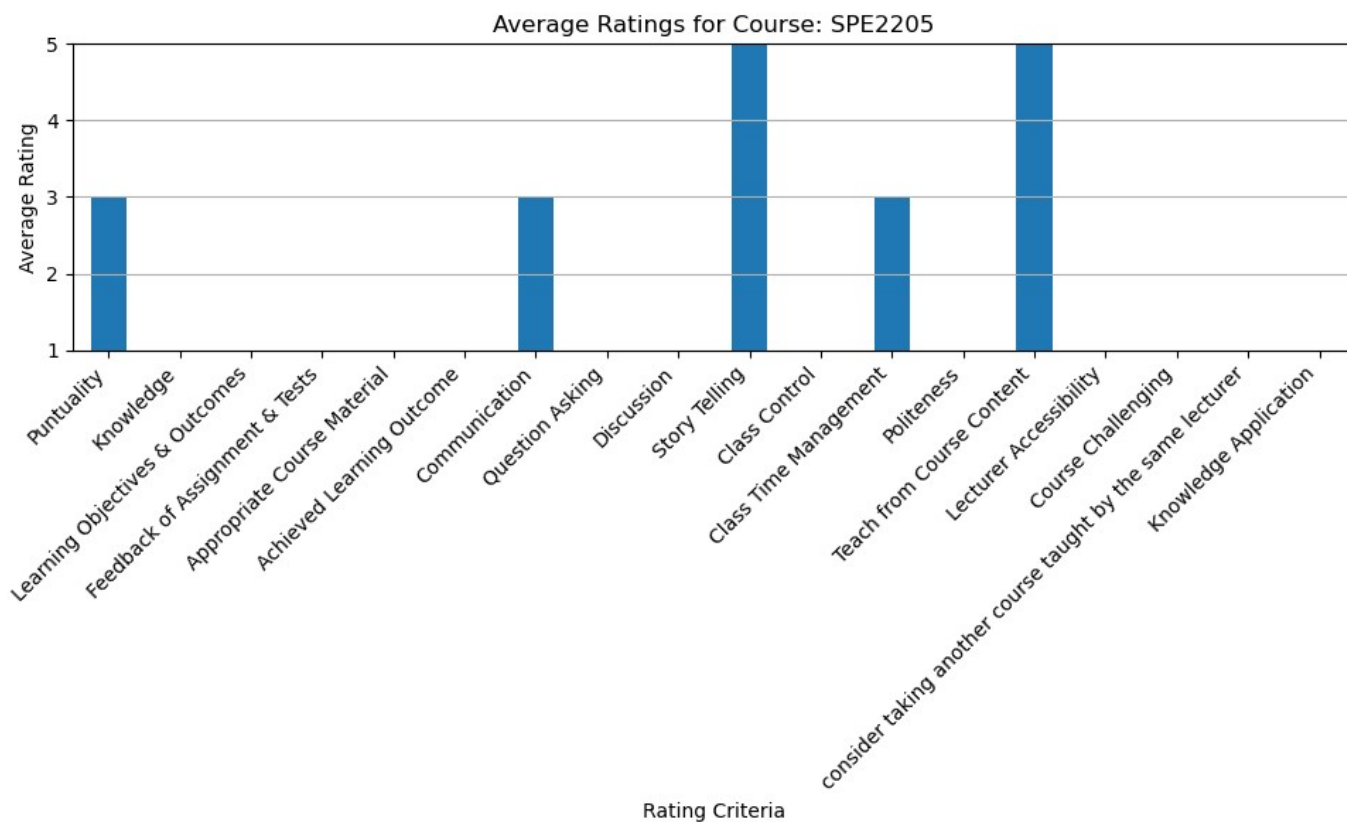
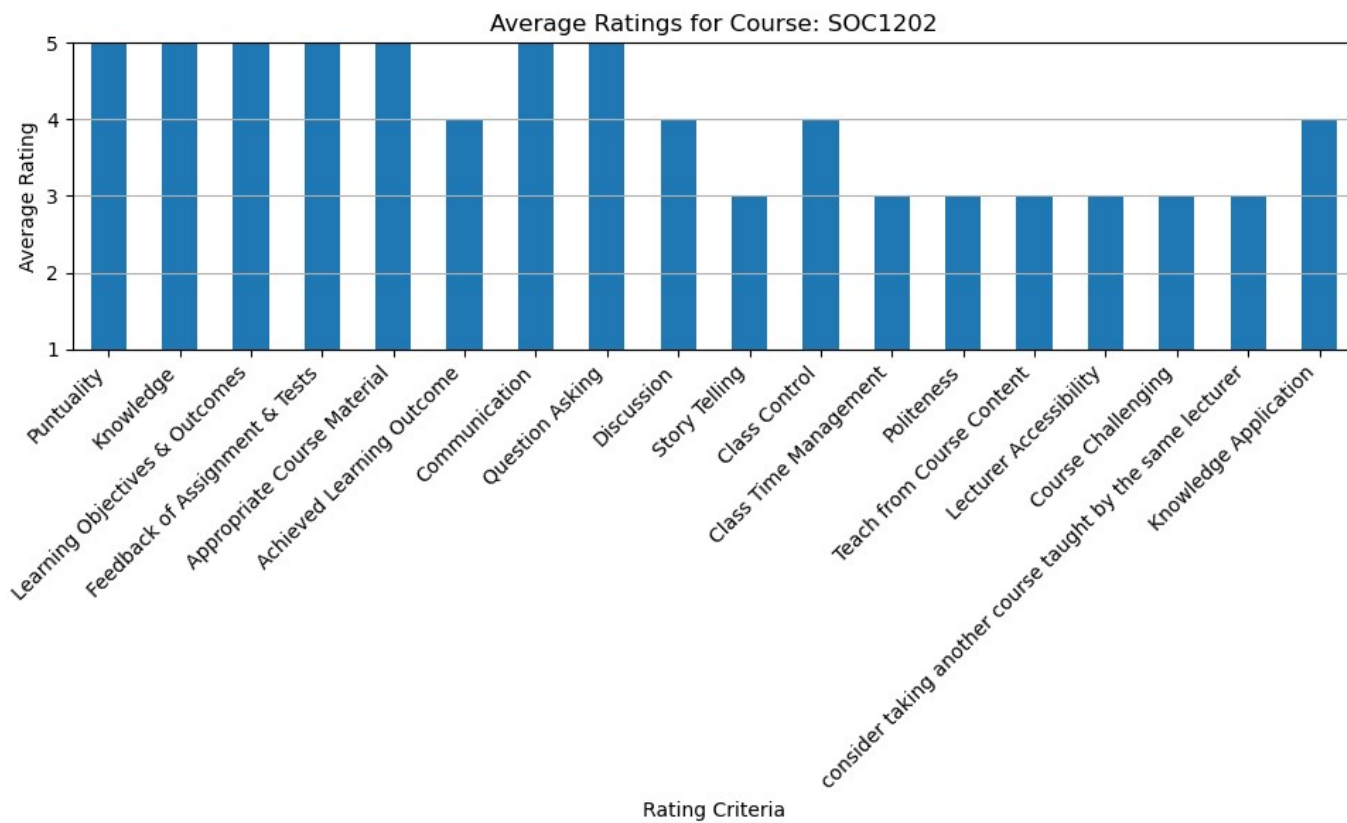


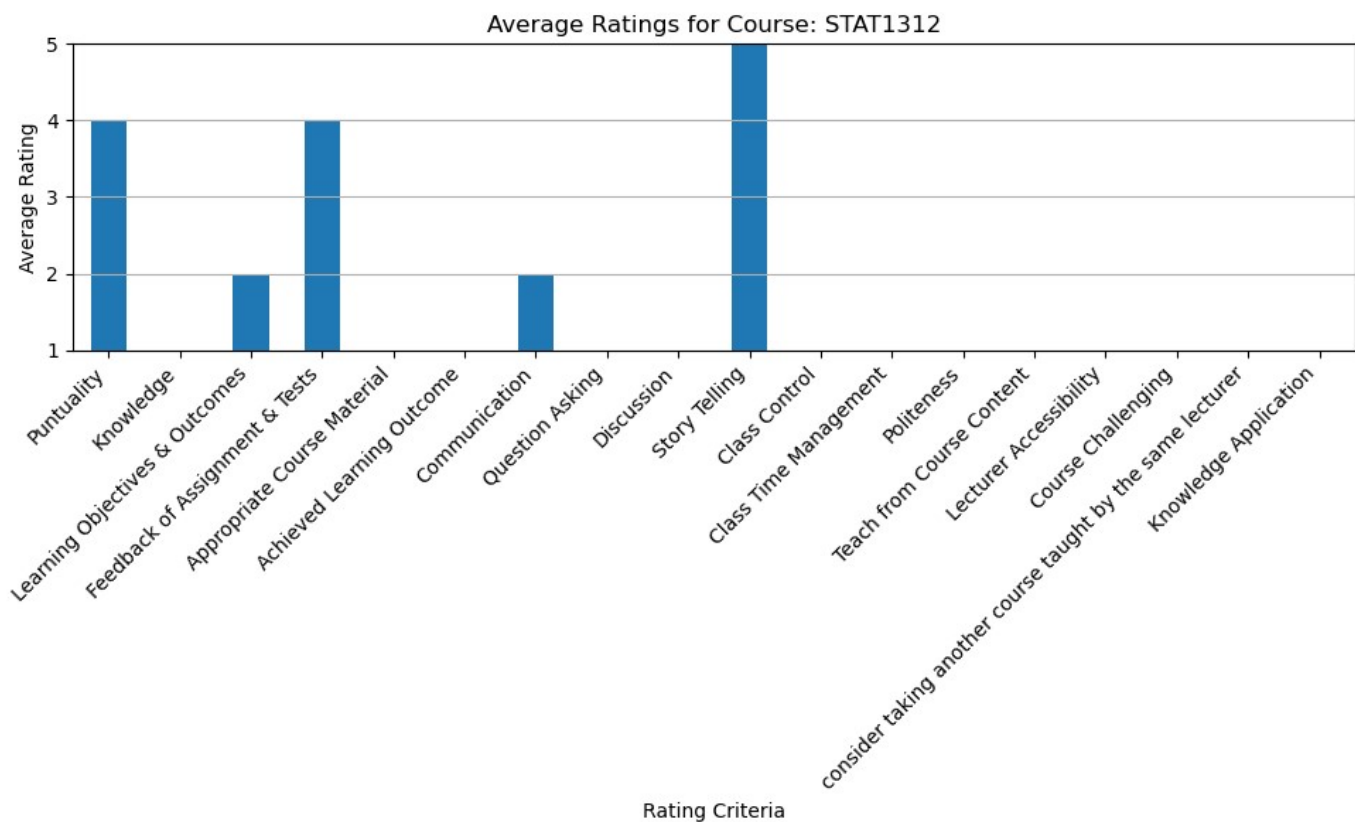
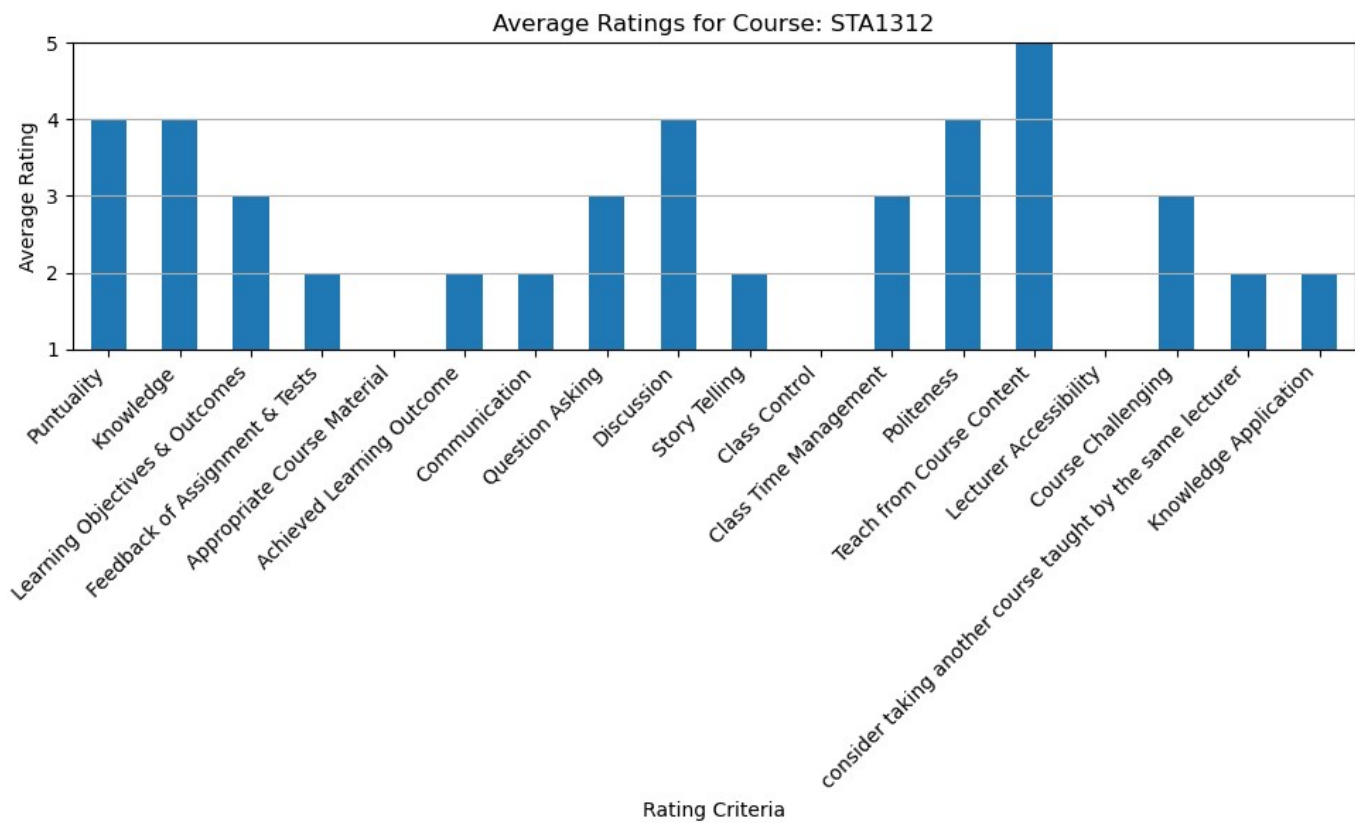


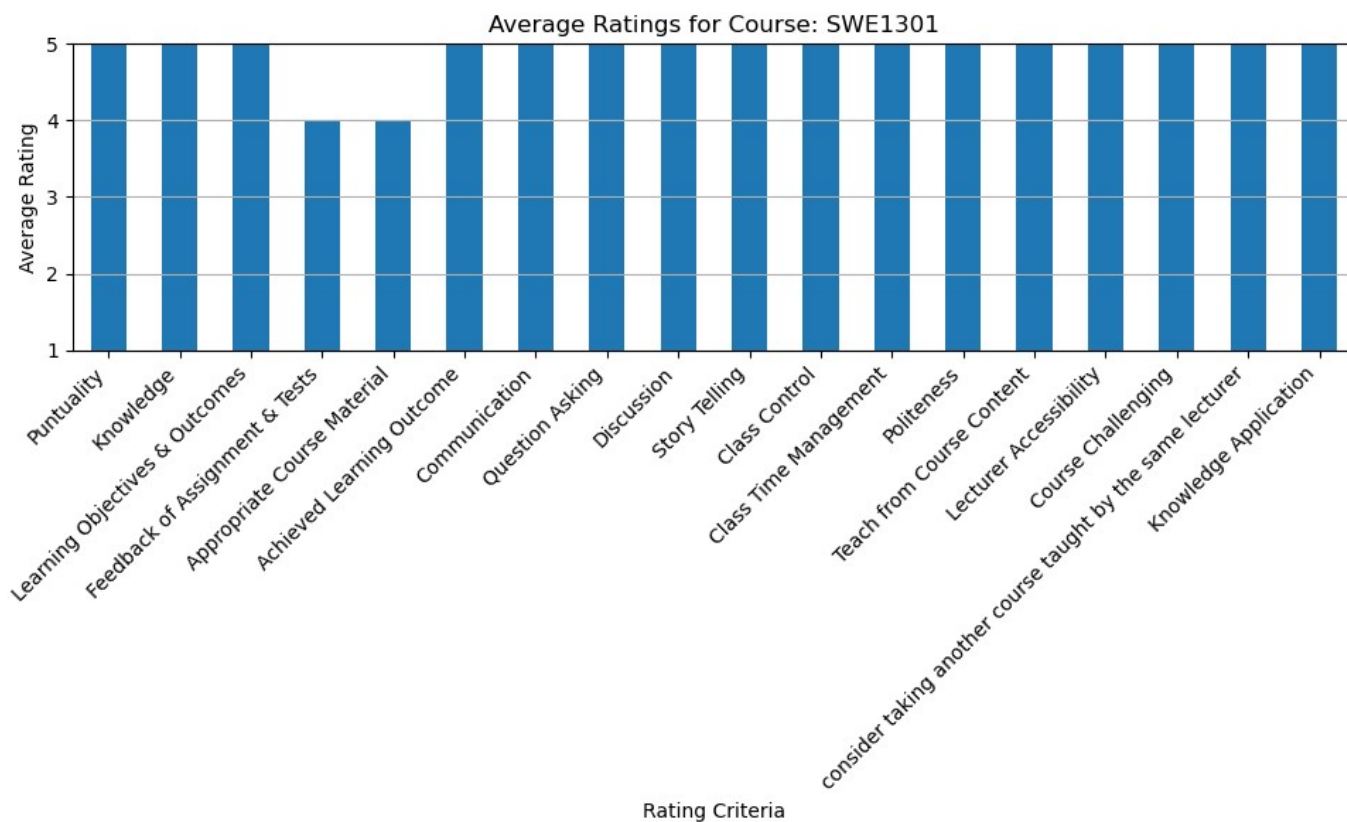
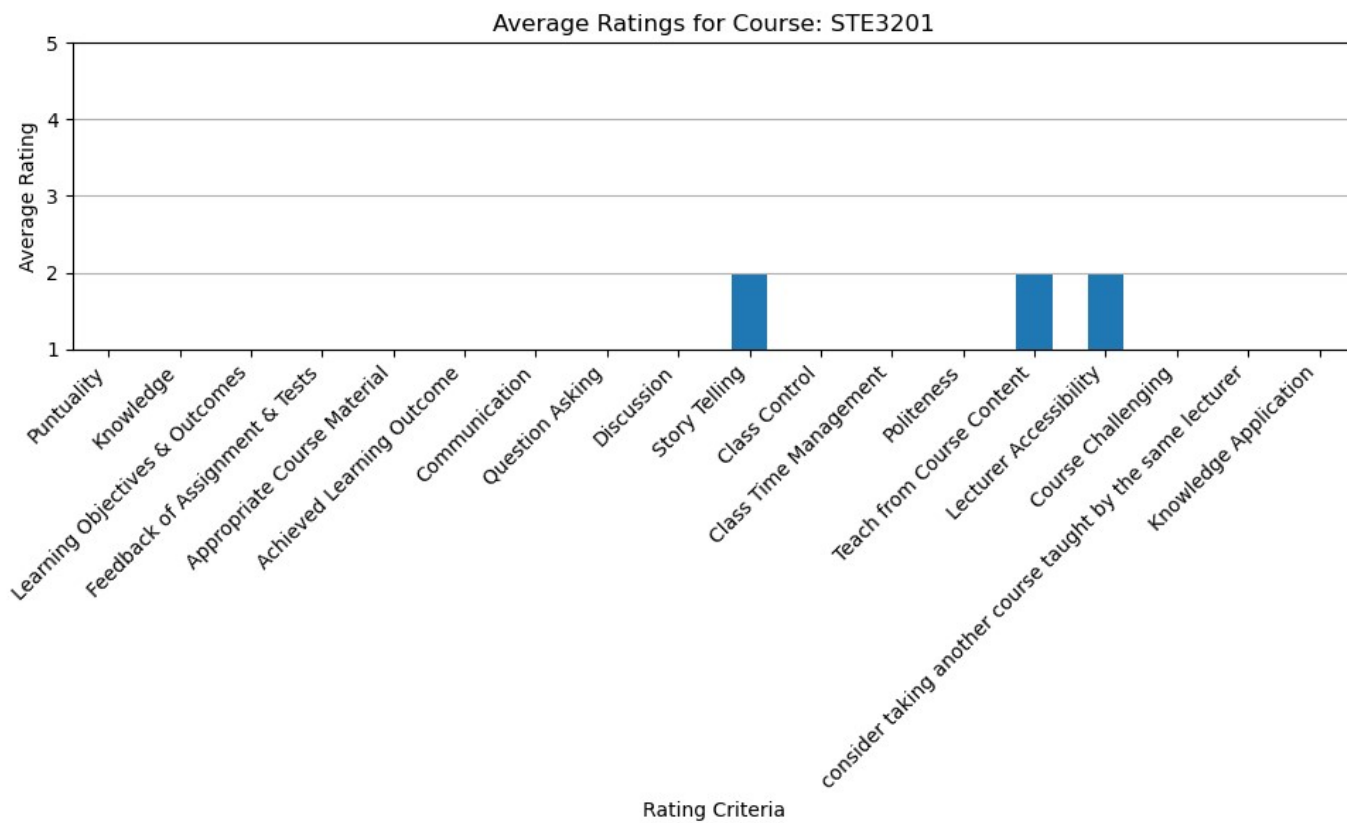




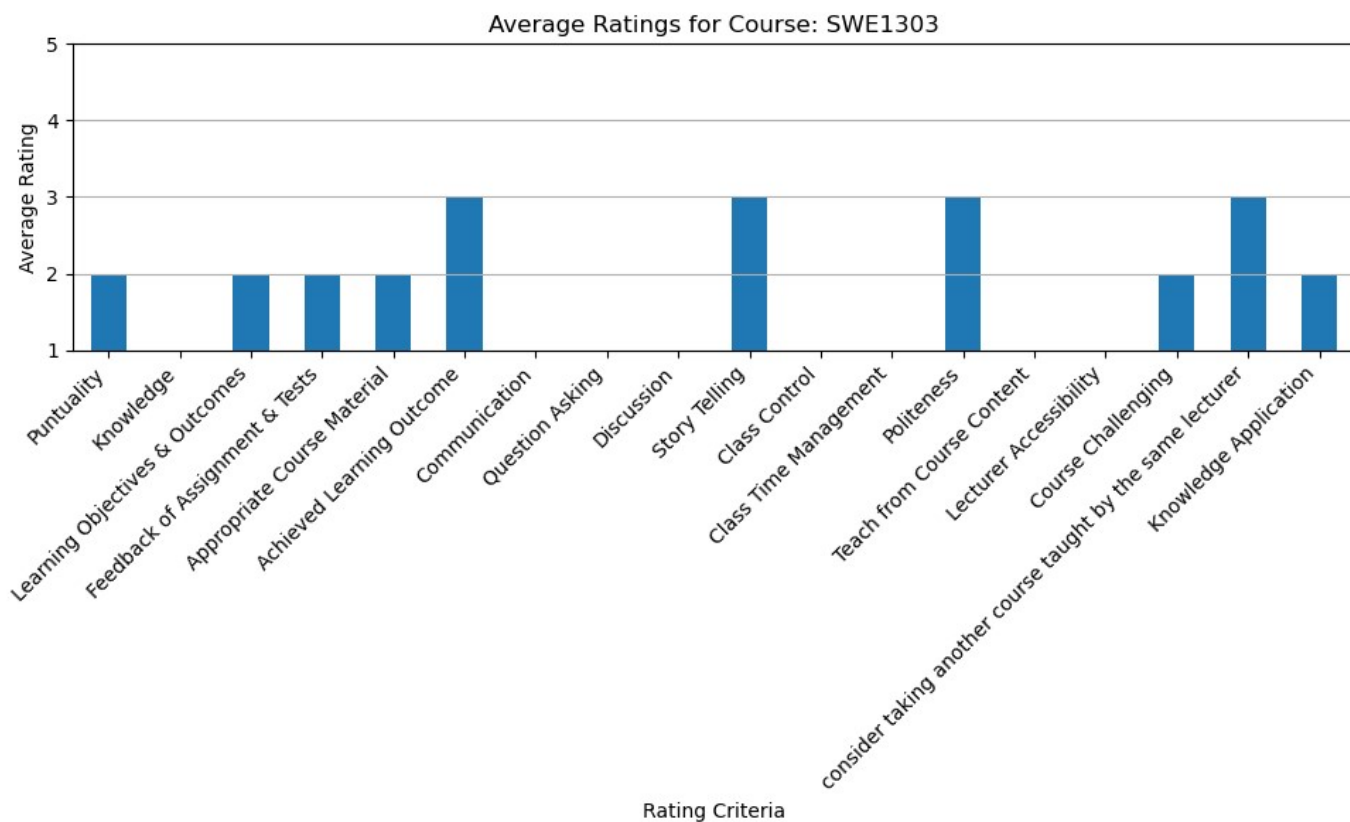
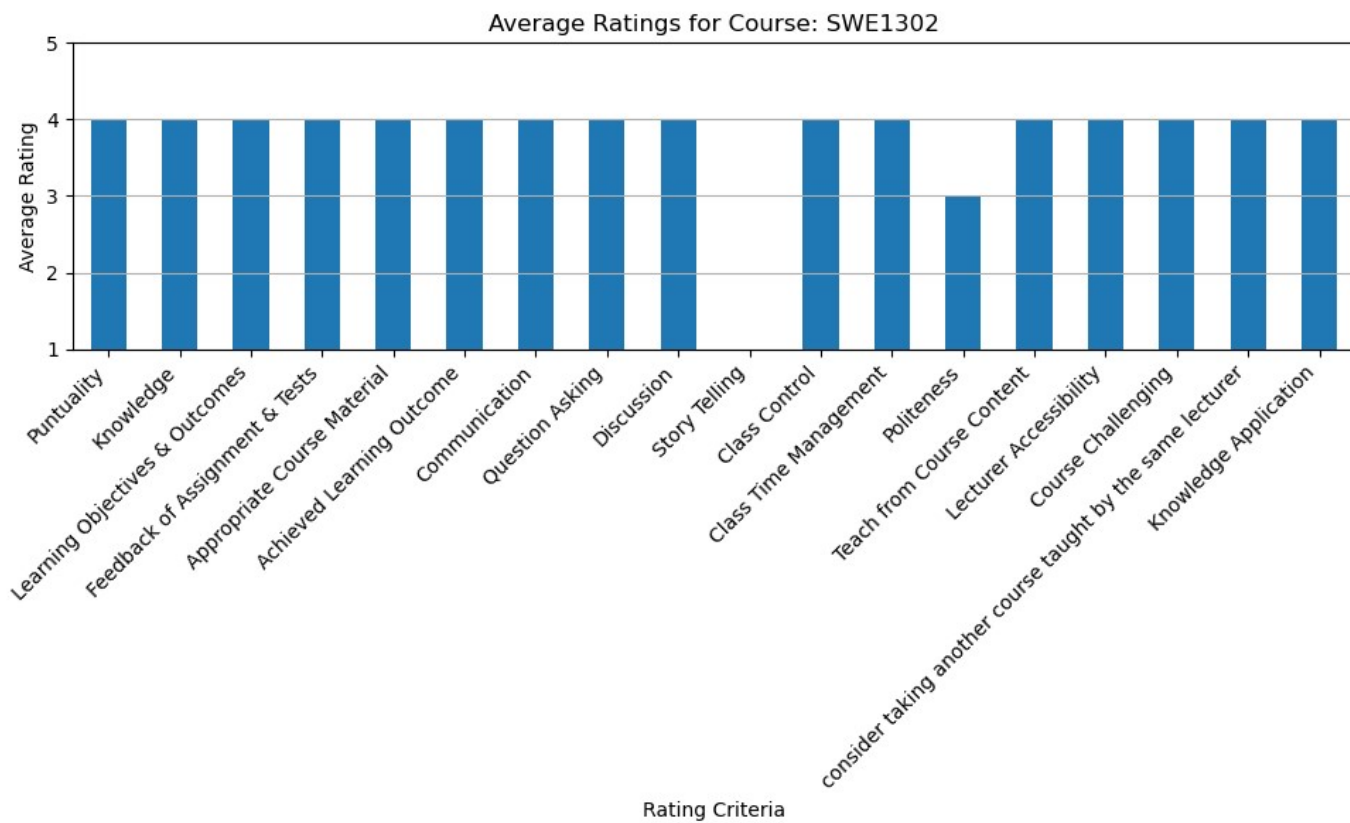


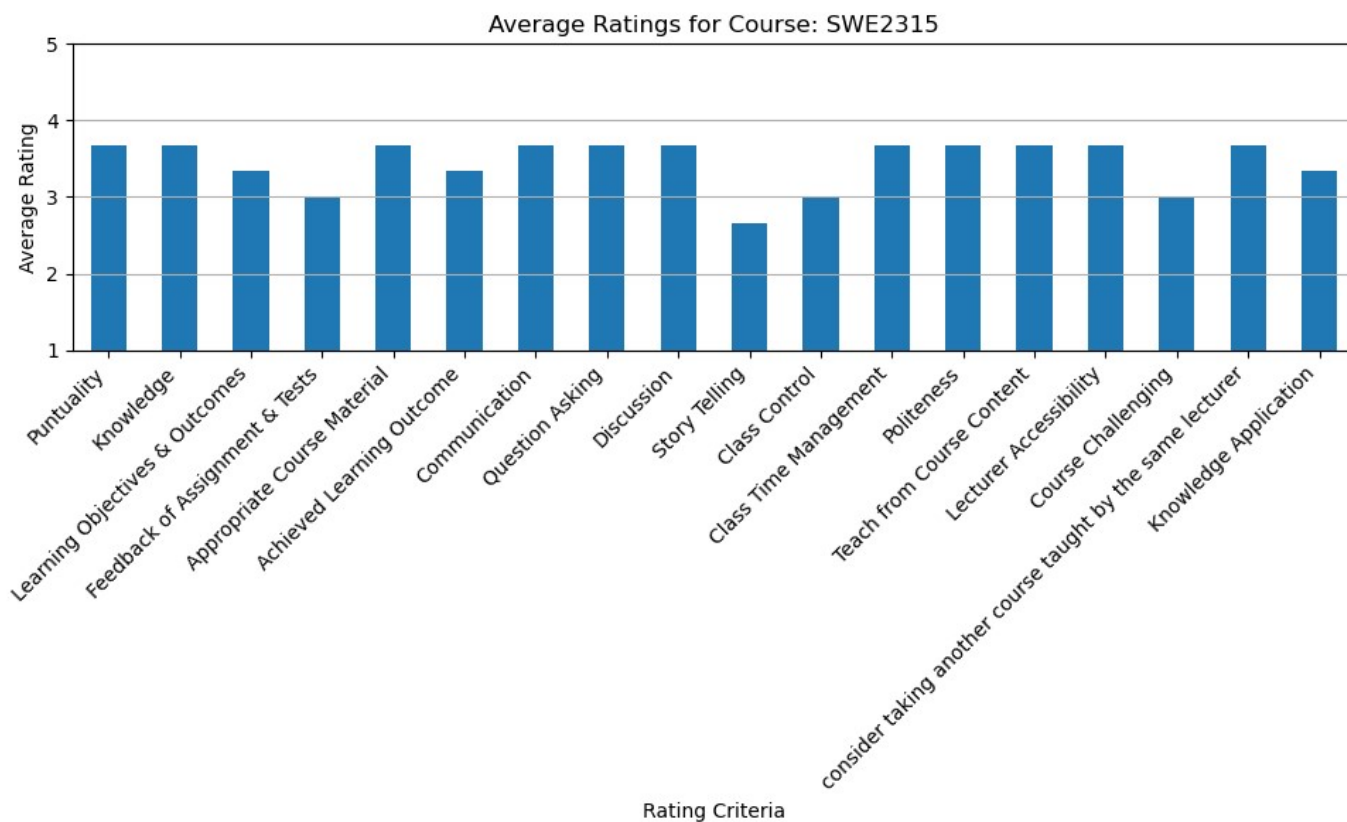
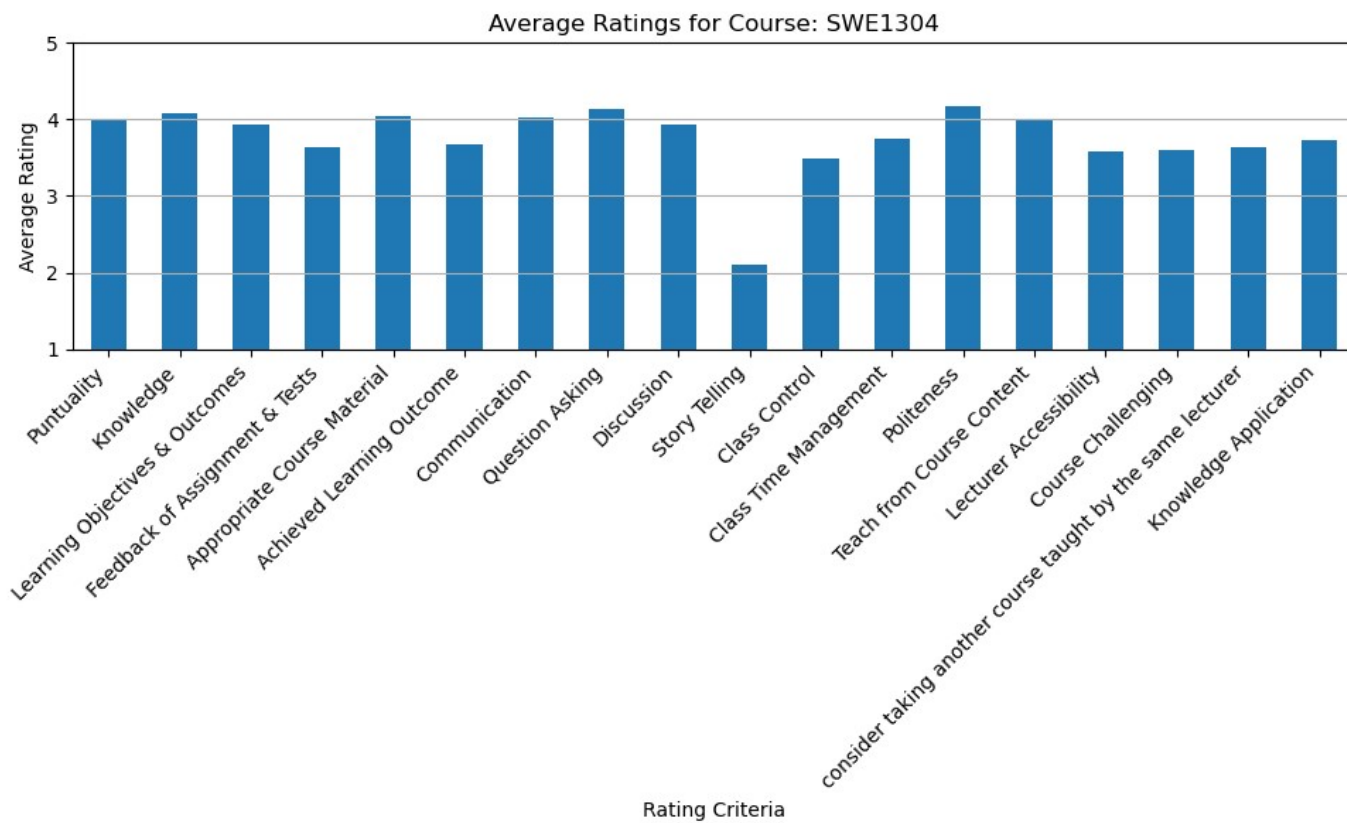


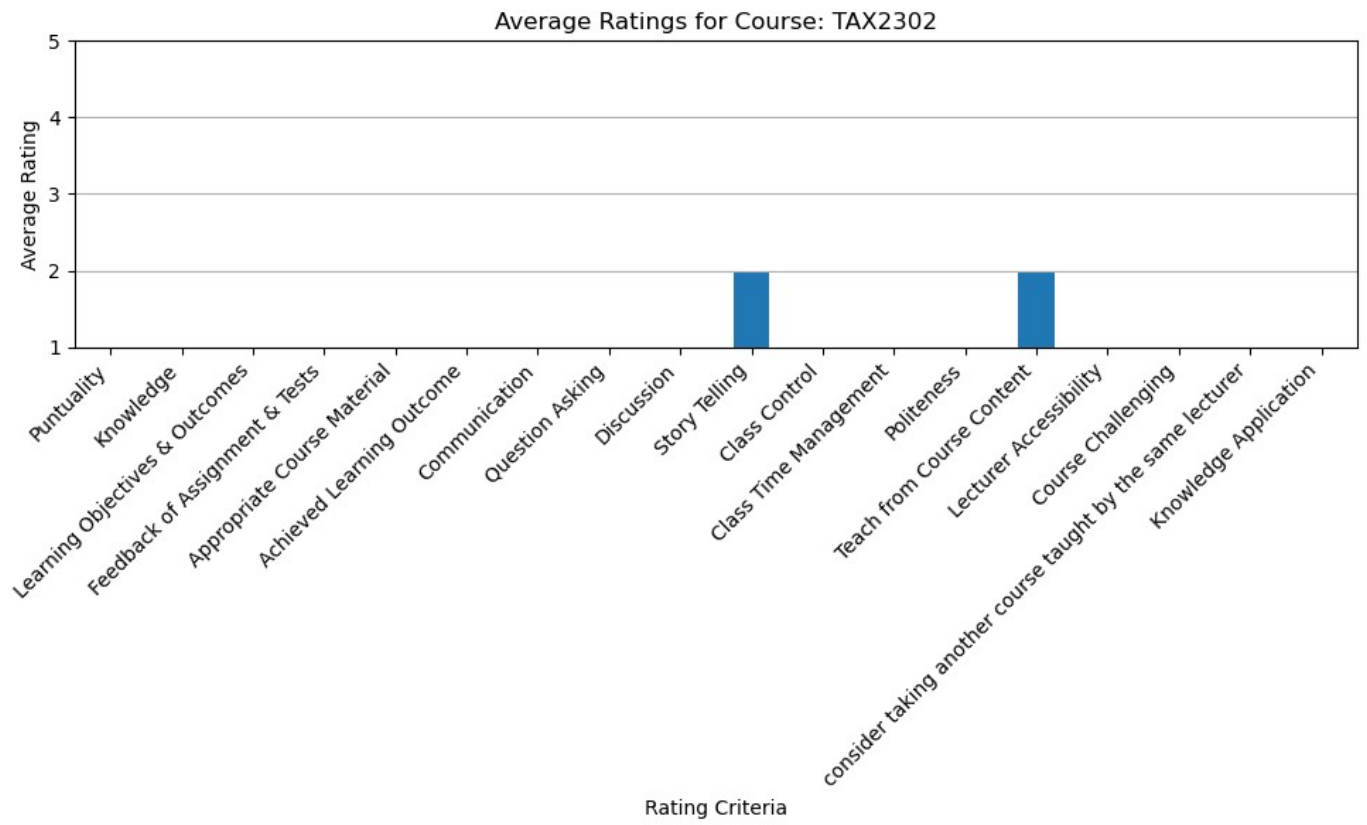












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