



Marmara University  
Faculty of Engineering

CSE 4288  
INTRODUCTION TO MACHINE LEARNING  
PROPOSAL  
GROUP 13

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**The Impact of Mental Health on Academic  
Performance in University Students**

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## **1. Introduction**

University students face a range of challenges, including academic pressure, financial strain, and personal relationships, which can impact both their academic performance and mental well-being. Mental health issues such as depression, anxiety, and panic attacks are increasingly prevalent in the student population and may affect students' ability to perform academically. This study aims to explore the relationship between mental health conditions and academic performance, focusing on university students' experiences of depression, anxiety, and panic attacks, and to examine how these factors are associated with their CGPA (Cumulative Grade Point Average).

## **2. Objectives of the Study**

- To analyze the prevalence of mental health conditions (depression, anxiety, panic attacks) among university students.
- To investigate the relationship between mental health conditions and students' academic performance, as measured by CGPA.
- To explore demographic factors (such as gender, age, and marital status) and their potential influence on mental health and academic performance.
- To assess students' willingness to seek professional help for mental health issues and how this might relate to their academic success.

## **3. Research Questions**

1. What is the prevalence of mental health issues (depression, anxiety, panic attacks) among university students in various courses and years of study?
2. Is there a statistically significant correlation between mental health conditions and academic performance (CGPA)?
3. Do demographic factors such as gender, age, and marital status influence the presence of mental health conditions in students?
4. Are students who seek treatment for mental health issues experiencing better academic outcomes than those who do not?

## **4- Overview of the Dataset**

The dataset contains responses from individuals, likely students, to a set of questions regarding their mental health and academic status. Here's a brief overview of the data:

1. Timestamp: The time when the response was recorded.
2. Gender: The gender of the individual (Female/Male).
3. Age: The age of the individual.
4. Course: The academic course the individual is enrolled in (e.g., Engineering, Islamic education, Psychology).
5. Current Year of Study: The year the individual is currently in (e.g., Year 1, Year 2, Year 3, Year 4).
6. CGPA: The individual's cumulative GPA, categorized into ranges (e.g., 3.00 - 3.49, 3.50 - 4.00).
7. Marital Status: Indicates if the individual is married or not (Yes/No).
8. Mental Health Conditions:
  - Depression: Whether the individual has depression (Yes/No).
  - Anxiety: Whether the individual has anxiety (Yes/No).

- Panic attack: Whether the individual experiences panic attacks (Yes/No).
- 9. Seeking Specialist Treatment: Whether the individual has sought specialist treatment for any of these conditions (Yes/No).

## 5. Methodology

This study will employ a quantitative research approach, analyzing existing data collected from university students on their mental health status, academic performance, and demographic background. The data set includes information on gender, age, course, year of study, CGPA, marital status, and self-reported mental health conditions such as depression, anxiety, and panic attacks, as well as whether the students sought professional help.

- **Sample Population:** University students across various courses and years of study.
- **Data Collection:** The dataset is based on student self-reporting and contains variables including gender, age, course, year of study, CGPA, marital status, depression, anxiety, panic attacks, and treatment-seeking behavior.
- **Data Analysis:** Statistical tests, including correlation and regression analysis, will be used to analyze the relationship between mental health conditions and CGPA. Logistic regression may also be applied to examine the impact of demographic variables on mental health outcomes.

## 6. Expected Outcomes

- A better understanding of how common mental health conditions are among university students and how these impact academic performance.
- Insights into whether seeking professional help for mental health issues correlates with higher academic performance.
- Recommendations for university support services based on identified needs and potential interventions to support students' mental well-being and academic success.

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## 7. Significance of the Study

This research is significant because it will contribute to the growing body of knowledge on mental health among university students. By examining how mental health impacts academic performance, the study can inform university policy makers and mental health professionals on effective ways to support students. The findings could highlight the need for increased mental health resources and early intervention programs that could positively influence students' academic outcomes.

## 7. Conclusion

Mental health issues are an important factor in academic success. This study proposes to examine the influence of mental health on academic performance in a university setting, with a particular focus on depression, anxiety, and panic attacks. The insights gained from this research can help universities understand the mental health challenges faced by students and lead to more supportive academic environments.