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RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

# REMACS 5.0

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CS240 - BACHELOR OF INFORMATION TECHNOLOGY [HONS.]  
CS248 - BACHELOR OF SCIENCES [HONS.]  
MANAGEMENT IN MATHEMATICS  
CS251 - BACHELOR OF COMPUTER SCIENCE [HONS]  
NETCENTRIC COMPUTING  
CS255 - BACHELOR OF COMPUTER SCIENCE [HONS]  
DATA COMMUNICATION & NETWORKING

**2<sup>nd</sup> February 2023**  
**Stor Complex, UiTM Perlis**

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Organized by:  
College of Computing, Informatics and Media  
Universiti Teknologi MARA Perlis Branch

**Research Exhibition in Mathematics and Computer Sciences  
(REMACS 5.0)**

Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)

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# Preface

It is with great pleasure that we present this extended abstract book, titled "The 5<sup>th</sup> Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)". This book is a collection of research work in the fields of Computer Science and Mathematics, contributed by the final year students from Universiti Teknologi MARA, Perlis Branch. The aim of this book is to showcase the diversity and depth of research in these two interrelated fields.

Mathematics and Computer Science are two fields that have seen tremendous growth and advancement in recent years. With the rise of new technologies and the increasing demand for data-driven solutions, researchers in these fields have been working hard to develop new theories, algorithms, and models that can help solve some of the most pressing problems of our time. This book is a testament to their hard work and dedication.

The abstracts in this book cover a wide range of topics, including algebra, analysis, logic, computer architecture, algorithms, artificial intelligence, machine learning, computer network, netcentric computing and many more. The work presented here is both theoretical and practical, and has the potential to impact many areas of society, from finance and healthcare to education and security.

We hope that this book will serve as a valuable resource for future students in the fields of Mathematics and Computer Science. We also hope that it will inspire more students to pursue innovative and groundbreaking research in these two fields. Finally, we would like to express our gratitude to all the contributors for their hard work and dedication, without which this book would not have been possible.



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# EVENT SCHEDULE

8:00 – 8:30 am

- Registration

8:00 am – 12:00 pm

- FYP Project Presentation

12:00 - 2:00pm

- Lunch Break

2:15 – 2:35 pm

- National & Wawasan Setia Anthems
- Doa Recitation

2:35 – 2:45 pm

- Welcoming Address by Director of REMACS 5.0

2:45 – 2:55 pm

- Officiating & Closing Remarks from Rector of UiTM Perlis

2:55 – 3:00 pm

- REMACS 5.0 Montage

3:00 – 4:00 pm

- Awarding of Winners:
  - Best Poster
  - Best Project Award
- Photo Session
- End of Ceremony

*Dress Code: Formal / Corporate*

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# EXTENDED ABSTRACTS

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RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES  
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# FUZZY ANALYTIC HIERARCHY PROCESS TO STUDY THE IMPACTS OF OPEN DISTANCE LEARNING ON UiTM PERLIS STUDENTS

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## **Abstract**

On March 18<sup>th</sup> 2020, the Malaysian government imposed a Movement Control Order (MCO) due to the high infection rates of COVID-19. This new disease had a significant impact on several aspects namely economic, educational and social aspects. During the lockdown, the entire education system, from primary to higher education, collapsed not only in Malaysia but worldwide. Teaching and learning methods have also been changed from traditional methods to online distance learning in order to reduce the spread of the Corona virus. Although distance education is convenient, there are some obstacles that students have to overcome. The main objective of the study is to identify the main impacts of open distance learning (ODL) on UiTM Perlis students using Fuzzy Analytic Hierarchy Process. Therefore, the use of Fuzzy Analytic Hierarchy Process was proposed in this study. Fuzzy Analytic Hierarchy Process (FAHP) is a method of Analytic Hierarchy Process (AHP) developed using fuzzy logic theory. This study found that the greatest impact of ODL on UiTM Perlis students is time spent learning, followed by sleep patterns, student performance, engagement to learn and mental health. The results of the study show that the greatest impact of Open Distance Learning (ODL) on UiTM Perlis students is the time they spend learning.

*Keywords: ODL, COVID-19, student, impact*

## **1. Introduction**

During Covid-19 hit, the learning mode was switched from physical to online. This is to prevent the Covid-19 epidemic from spreading. During distance learning, there are various challenges faced by students to undergo the learning process. Therefore, this study will focus on finding out the impacts of Open Distance Learning (ODL) on UiTM Perlis student. Students from Faculty of Computer and Mathematical Sciences from UiTM Perlis was chosen to be the respondents for this study. The main goal of this study is to determine the main impacts of ODL on UiTM Perlis student. This study was analyzed using the Fuzzy Analytical Hierarchy Process.

## **2. Methodology**

Data was collected through a questionnaire. Then, Fuzzy Analytic Hierarchy Process was used to analyze this study. There are nine steps that used in this study to get the objectives of this study which is to determine the goal, construct a hierarchical structure model, construct the pairwise matrix, check the consistency ratio, aggregated fuzzy number for criteria, updated pairwise comparison matrix for criteria, the weight vector calculation, defuzzification, and normalization and final ranking.

## **3. Results and Discussion**

According to the findings, the most factor that contributes to the impact of Open Distance Learning is an assignment deadline. While, lack of socialization is the second factor and family problems are the third factor that gives effects on respondents that contributes to the impacts of Open Distance Learning (ODL). In addition, internet connection, learning environment and financial problem is the least factor that contributes UiTM Perlis students to the impact of ODL. This research also determined the rank which impacts are most impactful to students during ODL. Based on the evaluation criteria, time spent

studying is the most impact of ODL for UiTM Perlis students followed by sleep pattern, the student's performance, engagement to learn and mental health. The findings are consistent with a few previous research that found time spend studying has an impact on student during ODL and the factor that contribute to the impact is because of assignment deadline, lack of socialization and family problems.

#### 4. Novelty of Research / Product

There have been a number of research that have investigated what are the major cause of stress towards distance education student and perceived stress among students during ODL (Kwaah & Essilfie, 2017; Mariyah et al., 2021). There have also been some research on online learning experience and student's perspective towards ODL (Noori & Noori, 2021; Al-mawee et al., 2021). Previous research about the impact on distance learning on psychology and study habits was done (Alomyan, 2021; Aristeidou & Cross, 2021). However, there has not been any research on the impact of ODL that not focus to one aspect and the factor that contribute to the impact. Therefore, this research aims to know what the impacts that students faced during ODL and what the factor that contribute to the impacts.

#### 5. Conclusion

This study investigated five impacts of Open Distance Learning on UiTM student Perlis which are mental health, student's performance, engagement to learn, sleep pattern, and time spent studying. Furthermore, six criteria have been studied, including financial problems, internet connection, a lack of socialization, assignment deadlines, family problems, and learning environment.

#### REFERENCE LIST

- Al-mawee, W., Morgan, K., & Gharaibeh, T. (2021). International Journal of Educational Research Open Student ' s perspective on distance learning during COVID-19 pandemic : A case study of Western Michigan University , United States. *International Journal of Educational Research Open*, 2(September), 100080. <https://doi.org/10.1016/j.ijedro.2021.100080>
- Alomyan, H. (2021). *The Impact of Distance Learning on the Psychology and Learning of University Students during the Covid-19 Pandemic*. 14(4), 585–606.
- Aristeidou, M., & Cross, S. (2021). Disrupted distance learning: the impact of Covid-19 on study habits of distance learning university students. *Open Learning*, 36(3), 263–282. <https://doi.org/10.1080/02680513.2021.1973400>
- Kwaah, C. Y., & Essilfie, G. (2017). *STRESS AND COPING STRATEGIES AMONG DISTANCE EDUCATION STUDENTS AT THE UNIVERSITY OF CAPE COAST , GHANA*. July, 120–134.
- Mariyah, N., Ghafar, A., Jamal, N. F., Idham, N., & Hasan, A. (2021). *Perceived Stress Among UiTM Students During Open and Distance Learning ( ODL )*. October. <https://doi.org/10.6007/IJARBSS/v11-i8/10893>
- Noori, A. Q., & Noori, N. (2021). Online learning experiences amid the COVID-19 pandemic: Students' Perspectives. *Academia Letters*. <https://doi.org/10.20935/al4307>

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