

**THE IMPACT OF 'HIGH-FAILURE RATE' MATHEMATICS  
COURSES ON UiTM SARAWAK FULL-TIME DIPLOMA  
STUDENTS' ACADEMIC PERFORMANCE**

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## ABSTRACT

This research seeks to analyze the impact of UiTM Sarawak full-time diploma students' academic performance on the 'high-failure rate' Mathematics courses. The respondents consisted of the full-time diploma students in UiTM Sarawak who had taken the 'high-failure rate' Mathematics courses, lecturers who had taught the 'high-failure rate' Mathematics courses and students who had taken those courses. The instruments comprised the report of final examination analysis, students' particulars in the registration database, the database of total credit hours for courses offered in each programme and questionnaires. From the findings, MAT133, MAT183, MAT192 and MAT293 were recognized as 'high-failure rate' Mathematics courses in UiTM Sarawak. The finding also showed that the 'high-failure rate' Mathematics courses had a significant portion of Pre-Calculus and Basic Calculus. SPM Additional Mathematics had the strongest impact on MAT133. Class size had a significant influence on MAT133 but not the other three 'high-failure rate' Mathematics courses. Female students were found to perform slightly better than their male counterparts in all the four 'high-failure rate' Mathematics courses. Analysis of the students' attitudes on 'high-failure rate' Mathematics courses had found out that the students were moderately positive in attitude. Analysis of the lecturers' perceptions revealed that lecturers generally found out that the students were basically weak in the basic foundation of Mathematics and relied heavily on lecture notes as basis for learning. This research concluded with some suggestions to improve the existing Mathematics courses situation.

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 Background of the research**

Mathematics is recognized as a gateway to future professions in variety of fields. Every area of Mathematics has its own unique applications to different career options. For example, Algebra is very important for Computer Science, Networking and the study of symmetry in Chemistry and Physics. Calculus is used in Chemistry, Biology, Physics, Engineering, and the study of option price modeling in Business and Economics. Students who choose to ignore Mathematics, or not taking it seriously in secondary school, may forfeit many future career opportunities that they could have. They essentially turn their backs on more than half of the jobs offered in the market.

In the university level, Mathematics courses are required for students who want to major in the following areas:

- Science and Technology (Biology, Chemistry, Engineering, Computer Science, Networking, etc)
- Health Sciences (Medicine, Pharmacy, Dentist, Nursing, etc)