

**DESIGN OF CLASSROOM ACCESS CONTROL SYSTEM AND  
ATTENDANCE MONITORING SYSTEM USING RADIO  
FREQUENCY IDENTIFICATION (RFID)**

**This thesis is presented as a partial fulfillment for the award of the  
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## **ABSTRACT**

Nowadays security is a vital factor in our society. New design such as door, electronic lock etc has been developed and improved for building security and its occupant safety. RFID technology has been used to improve the management system. Universiti Teknologi MARA (UiTM) provides facilities such as classrooms, laboratories and many more for students and staff. This study aims to design an access control and attendance monitoring system in UiTM. The accessibility to most of facilities in UiTM is unlimited. RFID based access control system can be implemented in classrooms and laboratories where the facilities can be access by a group of authorized person at a specific time. An authorized person can access these facilities depend on the timeslot that has been fixed. The attendance monitoring system will automatically record the entrance of authorized person for future application. The system have been develop and tested for one classroom in faculty of electrical engineering (FKE) and the result is successful with 100 percent verification of authorized and unauthorized person. The attendance monitoring system is also successfully developed when the attendance for each subject can be displayed accurately.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 BACKGROUND**

Currently the safety of facilities and occupants in a building in UiTM is poor. To protect both the facilities and the occupant is important to have access control system in the classroom and laboratory. Access control is a system which enables an authority to control access to areas and resources in a given physical facility or computer-based information system [1]. Many types of access control such as a lock on a car, a pin on an ATM machine and bouncers standing in front of a night club. An access control system determines who is allowed to enter or exit, where they are allowed to exit or enter, and when they are allowed to enter or exit. Door access control is one of the important security systems for building security and occupant safety. The door access control is a physical security that assures the security of a room or building by means limiting access to that room or building to specific people and by keeping records of such accesses [1]. The method for access control such as door key can be duplicated, lost, stolen, and forgotten.

RFID technology provides an active RFID tag with many advantages over traditional access control badges and systems since, it allowed the user to enjoy easy access control [2].