



**UTM**  
**UNIVERSITI TEKNOLOGI MALAYSIA**

**FACULTY OF COMPUTING**

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**LECTURER'S NAME: DR. Rozilawati Binti Dollah**

**Proposal for Campus Resource Management System**

<b>Student's Name</b>	<b>Matric No.</b>
Hazza raed hussein	A23CD4041

## **Introduction**

In the dynamic environment of UTM, the management of campus resources represents a significant operational challenge that impacts the overall efficiency and effectiveness of the educational institution. With the growing student population and the expanding scope of campus activities, it has become increasingly difficult to manage resources optimally using traditional methods. These challenges underscore the need for an innovative and integrated approach to resource management.

The proposed Campus Resource Management System (CRMS) is a digital platform aimed at transforming how resources are managed on campus. By leveraging technology, CRMS seeks to unify various administrative and operational functions into a single, user-friendly system. This system will not only simplify processes but also enhance transparency, accessibility, and real-time decision-making capabilities.

CRMS will serve as the backbone for managing all campus resources, including academic facilities, administrative offices, recreational areas, and communication channels. The integration of these resources under one platform is expected to lead to better coordination, reduced redundancies, and more effective utilization of the campus's assets. Furthermore, CRMS will play a crucial role in improving the campus environment by ensuring that resources are readily available to students, faculty, and staff, thereby supporting the institution's mission of providing high-quality education and fostering a vibrant campus community.

## **Background study**

At UTM, the management of campus resources currently involves a combination of manual processes and disjointed electronic systems. Facilities are booked through separate departmental systems, student information is handled by different administrative offices, and communication between various campus stakeholders often relies on outdated channels. This fragmented approach results in inefficiencies and a lack of cohesion in resource management and communication.

Existing Systems and Challenges:

1. **Facility Management:** Different departments manage their own booking systems, leading to conflicts and underutilization.
2. **Academic Administration:** Manual handling of enrollment, scheduling, and academic records leads to delays and increased administrative burden.
3. **Communication:** Reliance on multiple platforms for communication creates gaps and delays in disseminating vital information.

4. Technological Landscape: Advancements in integrated software solutions have shown significant benefits in other educational institutions. Systems that consolidate multiple functions into a single platform have improved operational efficiency, resource utilization, and stakeholder satisfaction.

#### Case Studies:


All the faculties: Implemented a unified resource management system that resulted in a 30% increase in facility utilization and a significant reduction in scheduling conflicts.

Faculty of Computing: Introduced a digital academic administration system that decreased the time spent on administrative tasks by 40% and improved data accuracy.

These examples illustrate the potential benefits of implementing a similar system at UTM. The CRMS aims to capitalize on these advancements by providing a unified, user-friendly platform that covers all aspects of campus resource management.

#### Justification for CRMS:

The need for CRMS at UTM is evident from both the internal challenges and the success stories of other institutions. By adopting a centralized, digital approach, the university can expect significant improvements in operational efficiency, resource management, and overall campus communication.

NAME: MATIC NO:		 <b>UTM</b> <small>UNIVERSITI TEKNIK MALAYSIA</small>		<small>Faculty of</small> <b>PROGRAM</b> <small>TARUN</small>		<small>SEMESTER</small> <b>SEM</b>		<small>SECTION</small> <b>SECTION</b>	
DAY	SUN	MON	TUE	WED	THU	TIME			
8.00 - 8.50	SECE013 PROGRAMMING TC TUNGGU I SRI MPKI DR. JAMILAH	URSI102 ENG DISE CONSTRUCTIVE SRI MPKI DR. JAMILAH	SECE013 DIGITAL LOGIC SRI MPKI DR. NURFAZINA	URSI101 MALAY LANGUAGE FOR COMPUTING TUNGGU SRI MPKI		02			
9.00 - 9.50									03
10.00 - 10.50			SECE143 SRI MPKI SRI MPKI	SECE102 SRI MPKI SRI MPKI	SECE102 SRI MPKI SRI MPKI	04			
11.00 - 11.50	SECE143 PROBABILITY & STATISTICAL DATA ANALYSIS SRI MPKI SRI MPKI	SECE115 COMPUTATIONAL MATHEMATICS SRI MPKI SRI MPKI	SECE103 PROGRAMMING OF TECHNIQUE I SRI MPKI DR. JAMILAH	URSI102 APPLICATION OF ETHICS & CYBER SECURITY SRI MPKI	SECE103 DIGITAL LOGIC SRI MPKI DR. NURFAZINA	05			
12.00 - 12.50						06			
2.00 - 2.50			URSI102 APPRECIATION OF ETHICS & CYBER SECURITY SRI MPKI			08			
3.00 - 3.50				SECE013 SYSTEM ANALYSIS & DESIGN SRI MPKI SRI MPKI		09			
4.00 - 4.50	URSI101 MALAY LANGUAGE FOR COMPUTING TUNGGU SRI MPKI					10			
5.00 - 5.50						11			

## Objectives

The primary objective of implementing the Campus Resource Management System (CRMS) at UTM is to enhance the management of campus resources through digitization and integration. The specific goals of the CRMS include:

- **Streamline Resource Management:** To create a centralized platform that enables efficient scheduling, management, and utilization of campus facilities such as classrooms, laboratories, auditoriums, and sports fields.
- **Improve Communication:** To establish a robust communication system within CRMS that ensures timely and effective dissemination of information to all campus stakeholders, thereby eliminating existing communication gaps.
- **Reduce Administrative Overhead:** To automate routine administrative tasks related to resource booking, event management, and academic administration, thereby reducing the workload on staff and minimizing human errors.
- **Enhance Decision-Making:** To provide administrators, faculty, and staff with real-time access to critical data about resource utilization, academic performance, and operational metrics, facilitating more informed and quicker decision-making.
- **Support Academic and Operational Planning:** To generate comprehensive reports and analytics that aid in strategic planning and decision-making processes, ensuring that the institution can adapt to future challenges and opportunities efficiently.
- **Digitalize Academic Schedules:** To transition from hard copy schedules to a digital platform, ensuring that all students, particularly those in their first semester, have instant access to accurate and up-to-date scheduling information.

These objectives are designed to address the specific challenges faced by UTM, as identified in the problem statement, and to leverage technology to improve the overall campus experience for students, faculty, and staff.

## Scope

The Campus Resource Management System (CRMS) is designed to enhance the management of campus resources at UTM through a comprehensive digital platform. The system will encompass several key functionalities including the management of facilities, events, student and faculty records, and communications. It will enable facility managers to streamline the booking and utilization of campus spaces such as classrooms, auditoriums, and laboratories, while also allowing event organizers to efficiently manage activities ranging from seminars to extracurricular events.

Additionally, the CRMS will facilitate better management of student and faculty affairs by automating processes related to enrollment, course registration, academic records, and human

resources management. An integrated communication system will ensure timely and effective dissemination of information across all levels of the campus community, enhancing connectivity between students, faculty, administrative staff, and management.

The implementation of the CRMS will be campus-wide, impacting all academic departments, administrative offices, and auxiliary services at UTM. The project will focus on leveraging existing data and system integrations without necessitating major overhauls in current IT infrastructure or the creation of new academic programs. While the CRMS will significantly aid in administrative decision-making, it is not intended to replace all administrative processes but to provide essential tools to support efficient decision-making.

Excluded from this project are any developments that require external network connections beyond the university's IT services or highly customized solutions for specific departmental needs that deviate significantly from standardized functionalities. The aim is to foster a unified approach to resource management that aligns with the overall strategic goals of the university and addresses the critical challenges currently faced.

**Im still working on it**

## **WBS for Campus Resource Management System (CRMS)**

### **1. Project Planning and Requirements Gathering**

#### **1.1. Initial project kickoff meeting**

#### **1.2. Stakeholder interviews**

#### **1.3. Requirements gathering**

##### **1.3.1. Facility booking**

##### **1.3.2. Event management**

##### **1.3.3. Student management**

##### **1.3.4. Faculty and staff management**

##### **1.3.5. Communication systems**

#### **1.4. Finalization of requirements document**

#### **1.5. Project plan development**

### **2. System Analysis and Design**

#### **2.1. System modeling**

##### **2.1.1. Use case diagrams**

##### **2.1.2. Sequence diagrams**

#### **2.2. Database design**

#### **2.3. Architecture design**

#### **2.4. Interface design mock-ups**

#### **2.5. Design review and approval**

### **3. System Development**

#### **3.1. Setting up development environment**

#### **3.2. Development of core functionalities**

**3.2.1. Facility Booking module**

**3.2.2. Event Management module**

**3.2.3. Student Management module**

**3.2.4. Faculty and Staff Management module**

**3.2.5. Communication and Notification module**

**3.3. Integration of modules**

**3.4. Development testing (unit and integration tests)**

**4. System Testing**

**4.1. System testing planning**

**4.2. Writing test cases**

**4.3. Performing system testing**

**4.4. Bug fixing**

**4.5. User Acceptance Testing (UAT)**

**5. Deployment and Training**

**5.1. Deployment planning**

**5.2. System deployment**

**5.3. Staff training sessions**

**5.4. System go-live**

**6. Maintenance and Evaluation**

**6.1. Post-deployment support**

**6.2. System performance evaluation**

**6.3. Regular updates and patches**

**6.4. Collecting user feedback**

**6.5. Implementation of improvements based on feedback**



Gantt Chart

