Software Requirements Specification

MIST Comprehensive Academic Manager (MCAM)

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Revision History

Date	Version	Description	Author	Reviewer
01.08.2020	0.1	Initial version	CSE Dept.	

Definitions, Acronyms, and Abbreviations

SDLC	Software Development Life Cycle
FIS	Faculty Information System
QA	Quality Assurance
GUI	Graphical User Interface
HTTP	Hyper Text Transfer protocol
HTTPS	Hypertext Transfer Protocol Secure
HTML	Hypertext Markup Language

1. Introduction

1.1 Purpose

The purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. It will contain the specifications and functionalities of the proposed MIST Comprehensive Academic Manager (MCAM). This document describes the project's target audience and its user interface, hardware and software requirements. It may also help any designer and developer to assist in software development lifecycle (SDLC). But it may not fully describe how the system works or how the user should use it. For that purpose, one should read the user's guide of MCAM.

1.2 Intended Audience

This SRS document is intended for:
− Developers who can review project's capabilities and more easily understand where their efforts should be targeted to improve or add more features to it (it sets the guidelines for each features' design and coding).
− QA member can use this document as a base for their testing strategy as some bugs are easier to find using a requirements document. This way testing becomes more methodically organized.
− SW architect need to extensively follow this document to prepare the system architecture.
− End users of this application who wish to read about what this project can do.

1.3 Project Scope

The scope of this research based project is to develop a system to computerize the overall student management system of MIST in a web-based customized platform. Under the scope of this research based project: admin, academic, admission, employee, HR, inventory, library, sms, finance, hall, alumni and parents involvement arena of the university will be automated. Under the scope of this project, initially following capabilities will be delivered:

- Customized automated university management system
- Advanced modules of system to serve streamline operations
- Web based architecture for central control and maximum security
- Easy integration with further improvement of system based on future requirements
- Providing one-stop solution to general students issues and requirements
- Simplified record management of student, university and overall system
- Simplified and strengthen decision making process for any general issue

1.4 References

2. Overall Description

2.1 Product Perspective

MCAM is a web-based platform that is used to collect, manage, maintain and report student and system. The overall system of the university can be controlled centrally with this system. Besides, the student and administration management, the HR, library, hall, faculty, finance and other sectors can be managed and controlled through this system software. Thus bringing all the service of the university under single tree.

2.2 Product Functions

Major functionalities of the system are defined as below:
   A. Academic
   B. Administrative
   C. Employee & HR
   D. Hall
   E. Library
   F. Alumni
   G. Accounts
   H. Procurement
   I. Mess

2.3 User Classes and Characteristics

All users of the system can be categorized in below types.(initial proposal)
System Admin: based on the request provide admin privilege.
Admin: Admin user will be able to insert, update and delete all types' records (of his module Example: GSO2 of CSE Dept. will have capabilities to modify and add any type of record of CSE dept. but not any other dept.). They will have master view permission to see all the available information.
Faculties: can login to the system and modify his/her records. The faculty will have permission to work in any field of academic section relevant to student management including marks, attendance, course, curriculum etc.
Students: Students can view their profile, classes and course materials. They might put their curriculum related queries to the faculties and office through the system.
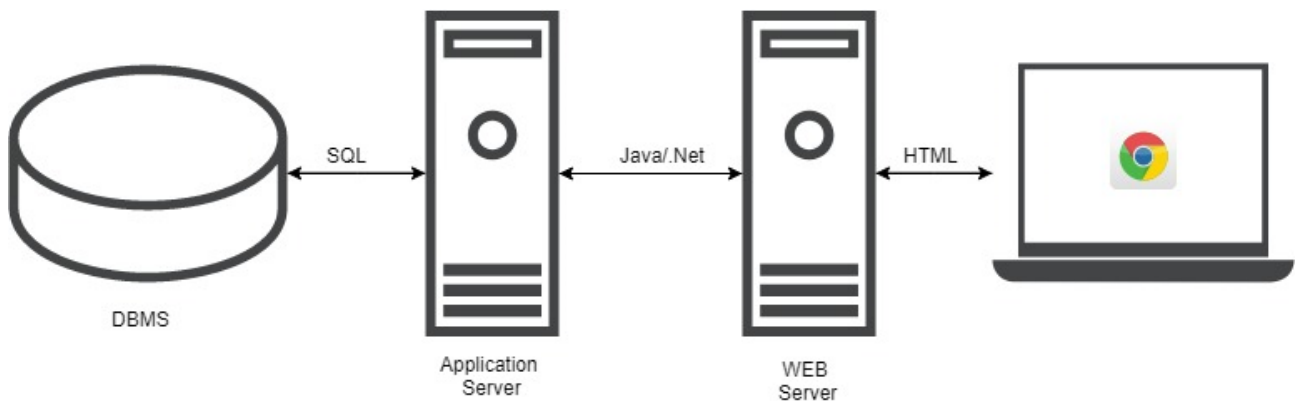**Other user:** can only view the publicly accessible pages.

2.4 Operating Environment
N.B.: This section will be updated by the software architect/consultant.

The FIS web site will be operated from the MIST server. When a user intends to access the FIS site he will be redirected to the MIST server where the site is hosted and that will help user to access the

desired data to and from our database. Below operating environment can be utilized to serve the purpose.

A standard Web server, or Apache's Web server, manages communication between the browser and the application server using the Hypertext Markup Language (HTML). The application server manages multiple user sessions logged onto the system at the same time as well as more complex business rule execution. And the application server also communicates to the centralized database server for any DB request.

2.5 Design and Implementation Constraints

The system shall be developed using open source tools and shall run on all popular web browsers. Database shall be implemented at least using a centralized database management system. The proposed system shall be designed such that they run on can be upgraded on a regular basis without any impact to overall UID system in use. The design must allow for replacement of hardware components with comparable hardware components from any vendor with minimal impact on the remaining hardware components.

2.6 User Documentation

User guide/manual will be prepared and updated later.

2.7 Assumptions and Dependencies

It is assumed that required data will be made available for the project in some phase of its completion. It is also assumed that the user is familiar with an internet browser and also familiar with handling the keyboard and mouse. Since the application is a web-based application there is a need for the internet browser and it is also assumed that the users will possess decent internet connectivity.

Although basic password authentication and role-based security mechanism will be used to protect MCAM from unauthorized access, functionality such as inserting, deleting, and updating are assumed to be sufficiently protected under the existing security policies applied by the MCAM developing team.

3. External Interface Requirements
N.B.: This section will be updated by the software architect/consultant.

3.1 User Interfaces

MCAM's GUI shall be a simple designed user interface which shall load all the Interfaces that constitute the basic functions of the application.

N.B.: GUI list will be updated later based on the IA (information architecture) document.

3.2 Hardware Interfaces

At least two servers with 16GB RAM should be used for MCAM

3.3 Software Interfaces

MCAM is a Web-based customized platform and it should run on all popular web browsers. Internet connection is also required.

3.4 Communications Interfaces

User on Intranet will be using HTTP/HTTPS protocol.

4. Functional Requirements

Below is the list of functional requirements of the proposed system.

4.1 UC Campus Management

Actor	Actions
Admin	- Admin will login and click add campus button. - He will add campus name, short form of the campus - A new campus with all its components will be added to the system.

UC	Campus management
Primary Actor(s)	Admin
Description	Authorized user can add a new campus
Trigger	Add new campus
Pre-conditions	User has access
Post-conditions	New campus will be added with all capacity of a campus
Main Success Scenario	1. Campus name 2. Short form of campus 3. Save & exit
Extensions	1a. New campus has exact same name of existing campus - Alert given & not saved. 2a. New campus has exact same short form of an existing campus - Alert given & not saved.
Priority	High
Special Requirements	??
Open Questions	???

4.2 UC Building Management

Actor	Actions
Admin Authorized users	- Admin will login and go to building management page. - He will add new record to assign new building plan. - Building plan will be updated.
Department/Wing	- Concerned department/wing officials will get the authorization to work on the building plan

UC	building management
Primary Actor(s)	Admin
Description	Authorized user can distribute building plan
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	4. Expand the section to add new record 5. building plan will be assigned 6. Save and close
Extensions	3a. If there is any repeatation - System will prompt warning and show troubleshoot options. 3b. Input data format is not valid - system will prompt warning if invalid data is provided to any filed 4a. try to save without filling the mandatory field. - form will not close and warning will be shown to the user
Priority	High
Special Requirements	??
Open Questions	???

4.3 UC Floor Management

Actor	Actions
Admin	- Admin will login and go to floor management page. - He will add new record to assign new floor plan. - Floor plan will be updated.
Department	- Concerned department officials will get the authorization to work on floor plan

UC	Floor management
Primary Actor(s)	Admin
Description	Authorized user can distribute floor plan
Trigger	Submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	1. Expand the section to add new record 2. floor plan will be assigned 3. Save and close

Extensions	3a. If there is any repetition
	- System will prompt warning and show troubleshoot options.
	3b. Input data format is not valid
	- system will prompt warning if invalid data is provided to any filed
	4a. try to save without filling the mandatory field.
	- form will not close and warning will be shown to the user
Priority	High
Special Requirements	??
Open Questions	???

4.4 UC Room Management

Actor	Actions
Department	- Department official will login and go to room management page.
	- He will add new record to assign new room plan.
	- Room plan will be updated.
Student Teacher	- He can view in which room he has class

	room management
Primary Actor(s)	Admin
Description	Authorized user can distribute room plan
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	4. Expand the section to add new record 5. Room plan will be assigned 6. Save and close
Extensions	3a. If there is any repetition
	- System will prompt warning and show troubleshoot options.
	3b. Input data format is not valid
	- system will prompt warning if invalid data is provided to any filed
	4a. try to save without filling the mandatory field.
	- form will not close and warning will be shown to the user
Priority	High

Special Requirements	??
Open Questions	???

4.5 UC Add Employee Profile

Actor	Actions
Faculty Admin	- User will login and go to add employee profile page. - He will click on add button & provide mandatory & valid data in the form. - He will save & new employee profile will be added.
Department	- Department officials can see the data.

UC	Add Employee
Primary Actor(s)	Any Faculty
Description	Enter new record in the database through form
Trigger	Add new record
Pre-conditions	Faculty need to be logged in
Post-conditions	New record will be available to users based on their access permission
Main Success Scenario	1. Expand the section to add new record 2. Click on the add icon 3. Provide mandatory and valid data in the form 4. Save and close

Extensions	3a. Input data format is not valid
	
	  - system will prompt warning if invalid data is provided to any filed
	
	4a. try to save without filling the mandatory field.
	
	  - form will not close and warning will be shown to the user

Priority	High
Special Requirements	NA
Open Questions	???

4.6 UC Update Employee Profile

Actor	Actions
Faculty	- User will login and go to update profile page.

	- He will click on edit button & provide mandatory & valid data in the form. - He will save & employee profile will be updated.
Department	- Department officials can see the updated data.

UC	Modify old records by faculty
Primary Actor(s)	Any Faculty
Description	Modify old records in the database through form
Trigger	Modify old records
Pre-conditions	Faculty need to be logged in
Post-conditions	Modified records will be available to users based on their access permission
Main Success Scenario	1. Expand the desired section to modify records 2. Click on the edit icon 3. fill the desired field in the form 4. Save and close
Extensions	3a. modified data format is not valid - system will prompt warning if invalid data is provided to any filed
Priority	High
Special Requirements	NA
Open Questions	???

4.7 UC - ID-Card Application

Actor	Actions
Student Faculty Staff officers	- User will log in & click on apply for ID card. - He will fill up necessary details(e.g., ID type, ID details) - He will forward for application
GSO-2(Co-ord)	- GSO-2(co-ord) will authenticate the ID details & forward it for applying by clicking 'Apply now' button.

	ID-Card Application
Primary Actor(s)	GSO-2
Description	Authorized user can apply for ID-Card
Trigger	Apply for ID-Card
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown in the ID-card application table of the ID-Card Admin
Main Success Scenario	1. Click on apply ID 2. Choose ID type 3. Insert ID Details 4. Choose forward for permission 5. Click on apply now

Extensions	2a. user is not eligible for ID - system will prompt warning to choose another type 5a. click apply now without provide proper information - system will prompt warning to provide proper information
Priority	High
Special Requirements	??
Open Questions	???

4.8   UC- Leave Application

Actor	Actions
Faculty Staff officers Admin	- User will log in & click on apply for leave. - He will fill up necessary details (e.g., duration, address during staying on leave, type of leave, leave approver etc.) - He will forward for application - A new record will be added to his leave record and will be shown as pending until leave is approved
GSO-2(Co-ord)	- GSO-2(co-ord) will authenticate the leave & leave status will be approved.

	Apply for leave
Primary Actor(s)	Faculty and admin
Description	Authorized user can apply for leave
Trigger	Apply leave
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown in the Leave status table of the user - approver admin will see new entry in the leave approval pending list
Main Success Scenario	6. Click on apply leave 7. Choose leave type 8. Choose the leave start date and end date 9. Choose leave approver 10. Click on apply now
Extensions	2a. user is not eligible for selected leave type - system will prompt warning to choose another type

	5a. click apply now without provide proper information - system will prompt warning to provide proper information
Priority	High
Special Requirements	??
Open Questions	???

4.9 UC- Rank Management

Actor	Actions
Admin	- Admin will log in & go to rank management window - He will choose faculty by entering his/her id. - He will choose service info & enter previous promotion info. - He will click on save button to update info.

	Rank Management
Primary Actor(s)	Admin
Description	Admin will enter/update promotion information of a faculty
Trigger	Update service info
Pre-conditions	User need to be logged in
Post-conditions	- promotion info of faculty will be stored in DB and can be viewed
Main Success Scenario	1. Choose faculty to enter/update his/her promotion info 2. Choose service info 3. Enter previous promotion info 4. Save and close
Extensions	
Priority	High
Special Requirements	Promotion info may contain: Designation promoted on Designation as on Last Promotion
Open Questions	???

4.10 UC- Position Management

Actor	Actions
Admin	- Admin will log in & go to position management window

	- He will choose faculty/staff officers by entering his/her id.
	- He will enter necessary info (e.g., previous post, new post etc.).
	- He will select priority number.
	- He will click on save to update position.

	Position Management
Primary Actor(s)	Admin
Description	Admin will enter/update position/appointment of MIST employees
Trigger	Position/Appointment of MIST employees
Pre-conditions	User need to be logged in
Post-conditions	- position/appointment info of employees will be stored in DB and can be viewed
Main Success Scenario	1. Choose employee to appoint post/appointment 2. Enter necessary information 3. Select priority number 4. Save and close
Extensions	
Priority	High
Special Requirements	Post/appointment info may contain: Post/appointment name Active Status Priority Number
Open Questions	???

4.11 UC- Department Management

Actor	Actions
Admin	- Admin will login and click add department button. - He will add department name, short form of the department & faculty of the department. - A new department with all its components will be added to the system.
Department Officials	- Concerned department officials will be able to control/work with the components of newly added department

	Department management
Primary Actor(s)	Admin
Description	Authorized user can add a new department
Trigger	Add department
Pre-conditions	User has access to add department
Post-conditions	New department will be added with all capacity of a department

Main Success Scenario	1. Department name 2. Short form of department 3. Faculty of department 4. Save & exit
Extensions	1a. New department has exact same name of existing department - Alert given & not saved. 2a. New department has exact same short form of an existing department - Alert given & not saved.
Priority	High
Special Requirements	??
Open Questions	???

4.12 UC- Program Management

Actor	Action
Admin	- Admin will login and go to add program - He will write program details in data form - He will save and exit - He will be able to see list of programs in data table
Student/Faculty	- He will login to system and go to add program - He will view the program that he belongs to.

Use case	Program Management
Primary Actor(s)	Admin
Description	Add new program to the institution
Trigger	New program added
Pre-conditions	There has to be a department under which this program will run
Post-conditions	The department will get this program to run
Main Success Scenario	1. Select Program 2. Put program details 3. Save and exit
Priority	High
Special Requirements	NA
Open Questions	???

4.13 UC- Add Course

Actor	Action
GSO-2/HoD	- He will login to system and select Add Course - He will add new course details in form - He will save and exit
Student/Faculty	- He will login to the system and select Course - He will view all the course available

Use case	Add Course
Primary Actor(s)	Department
Description	Adding a course for syllabus
Trigger	Add course
Pre-conditions	User has access & Course code is not added before
Post-conditions	A new course will be added
Main Success Scenario	1. Add Course Code 2. Add Course name 3. Add course & exit
Priority	High
Special Requirements	NA
Open Questions	???

4.14 UC- Add Syllabus/Curriculum

Actor	Action
GSO-2	- He will login to System and select course - He will add syllabus for the course - He will save and exit
Student/Faculty	- He will login to system and go to Course - He will view the syllabus corresponding to the course

Use case	Add Syllabus/Curriculum
Primary Actor(s)	Department
Description	Adding syllabus for a course
Trigger	Add Syllabus
Pre-conditions	User has access
Post-conditions	Syllabus will be added for a course
Main Success Scenario	1. Select course 2. Add syllabus 3. Save & exit
Priority	High
Special Requirements	NA
Open Questions	???

4.15 UC- Add Semester/Term

Actor	Action
Admin	- Admin will login to the system and go to Add Semester - He will enter the semester details in data form - He will save and exit
Student/Faculty	- He will login to system and select Semester - He will view the Semester

	Add semester/term
Primary Actor(s)	HOD
Description	Authorized user can plan semesters
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	1. Expand the section to add new record 2. Click on the add icon 3. Provide mandatory and valid data in the form 4. Save and close

Extensions	3a. Input data format is not valid
	
	   - system will prompt warning if invalid data is provided to any filed
	
	4a. try to save without filling the mandatory field.
	
	   - form will not close and warning will be shown to the user

Priority	High
Special Requirements	??
Open Questions	???

4.16 UC- Add Instructor

Actor	Action
Admin/GSO-2	- He will login to system and go to Instructor - He will add new instructor providing information in data form - He will generate credentials for the new faculty to join the system - He will save and exit
Faculty	- He will login to the system using the credentials - He will update the profile info

Use case	Add Instructor
Primary Actor(s)	Department
Description	Add instructor to a course

Trigger	Add instructor
Pre-conditions	User has access
Post-conditions	Instructor will be added to the course
Main Success Scenario	1. Select course 2. Select Instructor 3. Add Instructor 4. Exit
Priority	High
Special Requirements	NA
Open Questions	???

4.17 UC- Add Section

Use case	Add Section
Primary Actor(s)	Department
Description	Add section for a course
Trigger	Add section
Pre-conditions	User has access
Post-conditions	The term/level attending the course will be added
Main Success Scenario	1. Select course 2. Select Semester 3. Select teacher and time. 4. Save & exit
Priority	High
Special Requirements	NA
Open Questions	???

4.18 UC - Add Academic Calendar

Actor	Action
Admin	- Admin will login to system and go to academic calendar - He will add event against the date in academic calendar - He will save and exit
Employee	- He will login to system and go to Academic Calendar
Student	- He will view the events in Calendar

Use case	Academic Calendar
Primary Actor(s)	Admin
Description	Add events against the dates in academic calendar
Trigger	Events will be added in academic calendar
Pre-conditions	Admin has to be logged in to the system
Post-conditions	Events has to be added to the calendar

Main Success Scenario	1. Put events against the dates in the academic calendar 2. Save and exit
Extensions	
Priority	High
Special Requirements	NA
Open Questions	???

4.19 UC- Add Student Profile

Actor	Action
Department Officials	- Dept. official will login and go to add student profile page - He will add student information in the input boxes - He will click save and data will be saved in database - He can see the summary of students added in data table where he can filter by department, year, semester.
Teacher Student	- Go to student profile page and can view student information in data table where he can filter by dept., year, semester.

Use case	Add Student
Primary Actor(s)	Department Official
Description	Adding personal details of a student
Trigger	Create new student profile
Pre-conditions	Student has valid ID
Post-conditions	User will be directed to add profile details
Main Success Scenario	3. Add Student ID 4. Add name 5. Add registration number 6. Add CGPA 7. Add Credits earned 8. Add program 9. All the fields here are mandatory

Extensions	1a. Student ID does not exist
	    -User will not be allowed to proceed
	2a. Mandatory fields do not have valid input.
	    - The filed(s) are marked and user is not allowed to proceed

Priority	High
Special Requirements	NA
Open Questions	???

4.20 UC- Edit/Update Student Profile

Actor	Action
Department Officials	- Dept. official will login and go to add student profile page - He will find edit icon corresponding to every students in data tables. - He will click edit icon and student information input boxes will be available editable to him.

	- He will update and click save button.

Use case	Update Student
Primary Actor(s)	Department Official
Description	Update/edit personal details of a student
Trigger	Edit/Update Student personal details
Pre-conditions	Student's profile must be present
Post-conditions	User will be directed to edit/ student profile page
Main Success Scenario	1. Add Student ID 2. Add name 3. Add registration number 4. Add CGPA 5. Add Credits earned 6. Add program 7. All the fields here are mandatory

Extensions	1a. Student ID does not exist
	     -User will not be allowed to proceed
	 2a. Mandatory fields do not have valid input.
	     - The filed(s) are marked and user is not allowed to proceed

Priority	High
Special Requirements	NA
Open Questions	???

4.21 UC- Offer Course

Actor	Action
GSO-2	- Go to Course and click Offer Course. - Select the semester, course, teacher, time, credit and assign to students - Assign section to the students - Assign course advisors to the students - Click save.
Student	- Go to Course and click Offer Course - Select the courses he is willing to take and forward to course advisor
Course Advisor	- Go to Course and click Offer Course - Add/Remove course from the students (if required) - Forward to the HoD - Click save
HoD	- Go to Course and click Offer Course - Forward the offered course to the admission section
Admission Section	- Go to Course and click Offer Course - Generate bill based on the credit of the students and add other fees - Click save and exit

Use case	Offer course
Primary Actor(s)	Department, Admission Section, Student

Description	Offer a course to students and generate bill by Admission section
Trigger	Offer Course
Pre-conditions	User has access & course is not offered already
Post-conditions	A course will be offered
Main Success Scenario	1. Select semester, course, teacher, time and assign course to students 2. Student select course and forward to advisor 3. Advisor finalize the assigned course to students 4. Forward the course to accounts 5. Generate bill
Priority	High
Special Requirements	NA
Open Questions	???

4.22 UC - Course Fees

Actor	Action
Student	- Go to Course and click Assigned Course and click Bill - If get scholarship then show the official paper to the admission section (if applicable) - Get the course fees and other fees based on the assigned courses - Print out bill and pay fees
Admission Section	- Go to Course and click Assigned Course and Click Bill - If student show scholarship paper then reduce the bill of that corresponding student - Collect bank bill paper and mark success for the corresponding student in Bill section

Use case	Course Fees
Primary Actor(s)	Student, Admission Section
Description	Pay bill and reduce bill due to scholarship(if applicable)
Trigger	Success of semester fees bill payment
Pre-conditions	Course is offered already
Post-conditions	Student enrolled in course
Main Success Scenario	1. Drop the bill fees to the bank and admission will mark success for bill payment for corresponding student 2. Reduce bill of student based on scholarship paper (if applicable)
Priority	High
Special Requirements	NA
Open Questions	???

4.23 UC – Online Payment

Actor	Action
Student	- Online payment and select medium of payment - He complete transaction and his bill section will be updated

Use case	Course Fees
Primary Actor(s)	Student
Description	Student will complete payment through online transaction
Trigger	Student bill will be cleared online
Pre-conditions	Student has to have online accounts and payable bill
Post-conditions	Students' bill will be cleared
Main Success Scenario	1. Student will pick medium of transaction and pay bill 2. His bill section will be updated
Priority	High
Special Requirements	NA
Open Questions	???

4.24 UC- Add Routine

Actor	Action
GSO-2	- He will login to the system and go to routine - He will assign teacher to the routine along with students group - He will save and exit
Student/Faculty	- He will login to system and go to routine - He will view the details when he has classes in routine

Use case	Add Routine
Primary Actor(s)	Department
Description	Add routine for a course
Trigger	Add Routine
Pre-conditions	User has access
Post-conditions	Routine for a course will be generated
Main Success Scenario	1. Select course 2. Select semester 3. Select credit hour 4. Select day(s) & time slots 5. Save & exit
Extensions	4a. If the day & time slot overlaps with the instructor/students already saved routine then alert will be generated
Priority	High
Special Requirements	NA
Open Questions	???

4.25 UC- Add Attendance

Actor	Action
Faculty	- Faculty will login to system and go to add attendance - He will select course, level, date, period - He will put absent/present corresponding to the student - He will save and exit
Student	- Student will login to system and go to attendance - He will view status whether absent/present corresponding to course filtered by date and time

Use case	Add attendance
Primary Actor(s)	Course teacher
Description	Adding attendance for a particular contact hour
Trigger	Add attendance
Pre-conditions	The faculty is assigned to the course
Post-conditions	User will be re-directed to add attendance page
Main Success Scenario	1. Program is selected 2. Term/Semester is selected 3. Course is selected 4. Time slot is selected 5. Present/absent (with reason) is marked against each student 6. Attendance is saved
Priority	High
Special Requirements	NA
Open Questions	???

4.26 UC- Attendance Policy

Actor	Action
Admin	- Admin will login to the system and go to policy and select Attendance Policy - He will enter the policy details in data form - He will save and exit
Student/Faculty	- He will login to system and go to policy and select Attendance Policy - He will view the policy

	Attendance Policy
Primary Actor(s)	Faculty, Students
Description	View policy for attendance and requirements for being collegiate
Trigger	View policy
Pre-conditions	NA
Post-conditions	Policy cannot be changed
Main Success Scenario	1. Expand the section to show policy 2. Close and return to home

Priority	Medium
Special Requirements	NA
Open Questions	???

4.27 UC- Automation of Attendance

Actor	Action
Faculty	- Faculty will login to system and go to Attendance - He will click on Generate Summary button - List will be generated from system based on attendance data - He can print the report and exit
Student	- Student will login to system and go to Attendance - He will check status of collegiate/non-collegiate/dis-collegiate corresponding to the course - He will view and exit

Use case	Attendance Automation
Primary Actor(s)	Course teacher
Description	Calculation of non-collegiate, dis-collegiate & show the result to the user
Trigger	Show non-collegiate/dis-collegiate
Pre-conditions	The faculty is assigned to the course & faculty is logged in to individual profile
Post-conditions	User will be re-directed to profile
Main Success Scenario	1. Select Course 2. Select non-collegiate/dis-collegiate 3. Show result
Priority	High
Special Requirements	NA
Open Questions	???

4.28 UC – Add Assignment

Actor	Action
Faculty	- He will login and go to Assignment - He will select course, section and add assignment (doc/pdf) and add due date along with marks - In submission section of Admission, he can view the submitted assignments (doc/pdf) of the students and add marks against the assignment
Student/Faculty	- He will login to system and go to Assignment - He can download the assignment doc - He can submit the assignment(doc/pdf/zip file) in submit button

Assignment

Primary Actor(s)	Faculty, Student
Description	Faculty can add assignment and student can submit assignment
Trigger	Assignment will be added
Pre-conditions	Faculty, student has to be logged in
Post-conditions	Faculty, student has to be assigned to the course
Main Success Scenario	1. Faculty will go to Assignment section and add assignment 2. Student will submit assignment 3. Faculty will mark the students against the assignment
Priority	High
Special Requirements	NA
Open Questions	???

4.29 UC- Add Exam

Actor	Action
Admin	- Admin will login to the system and go to Add Exam - He will enter the exam details in data form - He will save and exit
Student/Faculty	- He will login to system and go to Exam - He will view the exam details

	Add new exams
Primary Actor(s)	HOD/Admin
Description	Authorized user can add exams
Trigger	Add exams
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown in the Exam table of the user - approver admin will see new entry in the exam approval pending list
Main Success Scenario	1. Expand the section to add new record 2. Click on the add icon 3. Provide mandatory and valid data in the form 4. Save and close 5.
Extensions	3a. If the exam dates overlap - System will prompt warning and highlight alternative dates. 3b. Input data format is not valid - system will prompt warning if invalid data is provided to any filed 4a. try to save without filling the mandatory field. - form will not close and warning will be shown to the user

Priority	High
Special Requirements	??
Open Questions	???

4.30 UC- Marks Policy

Actor	Action
Admin	- Admin will login to the system and go to policy and select Marks Policy - He will enter the policy details in data form - He will save and exit
Student/Faculty	- He will login to system and go to policy and select Marks Policy - He will view the policy

	Enter new record by faculty
Primary Actor(s)	Faculty
Description	View policy and rubrics for distribution of marks
Trigger	View policy
Pre-conditions	Faculty has to be logged in
Post-conditions	Policy cannot be changed
Main Success Scenario	4. Expand the section to show policy 5. Close and return to home
Priority	Medium
Special Requirements	NA
Open Questions	???

4.31 UC- Exam Policy

Actor	Action
Admin	- Admin will login to the system and go to policy and select Exam Policy - He will enter the policy details in data form - He will save and exit
Student/Faculty	- He will login to system and go to policy and select Exam Policy - He will view the policy

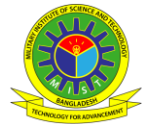|	Exam Policy
Primary Actor(s)	Faculty, Students, Admin
Description	View policy and rules for attending an exam when admin has entered marks policy
Trigger	View and Add policy
Pre-conditions	NA
Post-conditions	Policy cannot be changed
Main Success Scenario	1. Expand the section to show/add policy 2. Close and return to home
Priority	Medium

Special Requirements	NA
Open Questions	???

4.32 UC- Admit Card Management

Actor	Action
Student	- He will login to system and go to Admit Card Section - He will request for admit card based on exam - If admit card is approved from system, he will download it.
GSO2	- He will login to system and go to Admit Card Section - He will approve admit card of students who are eligible for exam (to be generated from system data).

	Apply for admit card
Primary Actor(s)	students
Description	Authorized user can apply for admit card
Trigger	Apply for admit card
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown in the admit card status table of the user - approver admin will see new entry in the admit card approval pending list
Main Success Scenario	1. Click on apply for admit card 2. Check for the desired subjects 3. Click on apply now
Extensions	2a. user is not eligible for admit card - system will prompt warning to choose another option 2b. Desired subects are not all registered. - system will have a button to report an issue. 3a. click apply now without provide proper information - system will prompt warning to provide proper information
Priority	High
Special Requirements	??
Open Questions	???

4.33 UC- Exam Center Management

Actor	Action

Admin	- Admin will login to the system and go to exam and select exam center management - He will enter to it and select building/floor/room for exam - He will save and exit
Student/Faculty	- He will login to system and go to exam and select exam center - He will view where exam will be held

	Exam center management
Primary Actor(s)	Admin
Description	Authorized user can distribute exam centers
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	1. Expand the section to add new record 2. Click on the add icon 3. Provide mandatory and valid data in the form 4. Save and close 5.

Extensions	3a. Input data format is not valid
	
	   - system will prompt warning if invalid data is provided to any filed
	
	4a. try to save without filling the mandatory field.
	
	   - form will not close and warning will be shown to the user

Priority	High
Special Requirements	??
Open Questions	???

4.34 UC- Exam Seat Plan Management

Actor	Action
Admin	- Admin will login to the system and go to exam and select Exam Seat Plan Management - He will enter the exam seat plan details in data form - He will save and exit
Student/Faculty	- He will login to system and go to exam and select Exam seat plan - He will view where his exam will be located

UC-10	Exam seat plan management
Primary Actor(s)	Admin
Description	Authorized user can distribute seat plan
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	7. Expand the section to add new record

	8. Seat plan will be auto generated
	9. Save and close
Extensions	3a. If a students roll is repeated or not there
	- System will prompt warning and show troubleshoot options.
	3b. Input data format is not valid
	- system will prompt warning if invalid data is provided to any filed
	4a. try to save without filling the mandatory field.
	- form will not close and warning will be shown to the user
Priority	High
Special Requirements	??
Open Questions	???

4.35 UC- Examiner Management

Actor	Action
Admin/HoD/Exam Controller	- He will login to the system and select examiner under exam for any particular exam
Faculty	- he will login tot the system and go to exam and then examiner - He can see for which exam, he is appointed as examiner

	Examiner management
Primary Actor(s)	Dept head
Description	Authorized user can distribute examiner
Trigger	submit
Pre-conditions	User need to be logged in
Post-conditions	- New entry will be shown
Main Success Scenario	1. Expand the section to add new record 2. Click on the add icon 3. Provide mandatory and valid data in the form 4. Save and close
Extensions	3a. If the examiner dates overlap - System will prompt warning and highlight alternative options. 3b. Input data format is not valid - system will prompt warning if invalid data is provided to any filed

	4a. try to save without filling the mandatory field. - form will not close and warning will be shown to the user
Priority	High
Special Requirements	??
Open Questions	???

4.36 UC- Notice Circulation

Actor	Action
Admin/GSO-2/Faculty	- He will login to system and go to Notice - He can select course/semester and send notice. - He will save and exit
Student	- He will login to the system and go to Notice - He will view the notice

Use case	Notice circulation
Primary Actor(s)	Department
Description	Circulation of notice of the classes
Trigger	Generate notice
Pre-conditions	User has access
Post-conditions	Notice will be generated
Main Success Scenario	1. Select semester 2. Select Courses 3. Generate routine 4. Save/download 5. Exit
Priority	High
Special Requirements	NA
Open Questions	???

4.37 UC- Add Marks

Actor	Actions
Teacher	- Teacher will login and go to Add Marks - He will select the course, level - He will select the type of exam (CT/Mid/Final) - He will write the marks corresponding to the student id number - He will save and exit
Student	- He will login and go to Marks - He will view the marks corresponding to courses

Use case	Add marks

Primary Actor(s)	Department
Description	Add marks for an exam
Trigger	Add marks
Pre-conditions	User has access
Post-conditions	Marks will be added for a particular exam of a course
Main Success Scenario	1. Select course 2. Select exam 3. Add marks for each student 4. Save
Extension	4a. If mark field for any one student do not have valid input, those fields will be marked red and marks will not be saved
Priority	High
Special Requirements	NA
Open Questions	???

4.38 UC- Generate Tabulation Sheet

Actor	Actions
Teacher	- Teacher will go to Add Marks - Click for generate Tabulation sheet - System will check if all marks entry done else give alert to enter missing marks - Finally, Grades will be generated based on marks
Student	- Student will go to Marks - Student will view the Grade corresponding to the course

Use case	Generate tabulation sheet
Primary Actor(s)	Department
Description	Generate tabulation sheet for an exam
Trigger	Generate tabulation sheet
Pre-conditions	User has access
Post-conditions	Notice will be generated
Main Success Scenario	1. Select semester 2. Select class 3. Generate tabulation sheet 4. Save/download
Extension	3a. If marks of an exam of a course (e,g, CT/midterm is not added properly, alert will be given that marks not added
Priority	High
Special Requirements	NA
Open Questions	???

4.39 UC- Add TPE

Actor	Actions

Student	- Student will login and go to add TPE page. - He will select semester. - He will select course among all the courses offered to him in that semester. - He will select an instructor from a course. - He will fill up all the evaluation criteria of the instructor. - He will save & fill up the evaluation criteria of other instructors by turn. - Until he fills up TPE of all the instructors, error message will be shown. - Once he fills up TPE of all the instructors, he will save & exit.

Use case	Add TPE
Primary Actor(s)	Student
Description	Adding TPE of a teacher in a course
Trigger	Add TPE
Pre-conditions	User has access & He is registered for that course
Post-conditions	One TPE will be added for that teacher
Main Success Scenario	1. Select semester 2. Select Instructor 3. Select course 4. Fill up all the evaluation criteria 5. Save & exit
Priority	High
Special Requirements	NA
Open Questions	???

4.40 UC- Summarize TPE

Actor	Actions
Head of the Department Other authorized department officials	- Authorized user will login and go to summarize TPE page - He will select semester, course & instructor. - Total response & average will be shown.

Use case	Summarize TPE
Primary Actor(s)	Department
Description	TPE of a teacher in a course will be summarized
Trigger	Summarize TPE
Pre-conditions	User has access
Post-conditions	Summarized TPE will be shown
Main Success Scenario	1. Select Semester 2. Select course 3. Select Instructor 4. Show summary

	5. Total response & average rating will be shown
Priority	High
Special Requirements	NA
Open Questions	???

4.41 UC – OBE Management

Actor	Action
Instructor	- Go to OBE - Insert the CO and PO of the courses taught - Insert the student performance in various courses (projects, work history)
Official Admin	- Go to OBE - Insert the course related information including syllabus - Insert the administrative information required for OBE - Generate the OBE report

	OBE Management
Primary Actor(s)	Admin, Faculty
Description	Admin, Faculty will put necessary info related to OBE in system
Trigger	OBE system info will be updated
Pre-conditions	- All info related to OBE are available to be inserted
Post-conditions	- If any info related to OBE exist in other modules system will collect that
Main Success Scenario	1. OBE report will be generated
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.42 UC – Student Discipline Management

Actor	Action
DSW, Dept. Admin	- Go to Discipline page - Add disciplinary issue against student and the punishment record
Student	- Go to Discipline page - View disciplinary actions taken against the student

	Student Discipline Management
Primary Actor(s)	DSW, Dept. Admin, Student
Description	DSW, Dept. Admin will input disciplinary issue against student and the punishment record and student can view that
Trigger	Disciplinary issues against the students will be recorded
Pre-conditions	- Disciplinary issues to be acknowledged by authority

Post-conditions	
Main Success Scenario	1. Disciplinary issues against student will be recorded for future reference
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.43 UC – Extra Curricular Activities Management

Actor	Action
Department Admin	- Go to ECA and keep data entry of achievements in ECA against individual students - Go to ECA and keep record of students in different ECA

ECA Management	
Primary Actor(s)	Dept. Admin
Description	Admin will keep track of success and interest of individual student in ECA
Trigger	Success and interest of individual students will be recorded
Pre-conditions	- User need to be logged in - Success of individual student has to be recognized by authority
Post-conditions	
Main Success Scenario	1. Dept. Admin will go to ECA section 2. He will insert data against the student based on his success and interest on ECA activities
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.44 UC – Online Counseling Hub for Students

Actor	Action
Admin	- Go to Counseling section and assign students to counselor
Counselor	- Go to Counseling section and meet the assigned students one to one conversation if students have requested for session
Student	- Go to Counseling section and request for counseling session with his assigned counselor

Counseling Hub	
Primary Actor(s)	Admin, Counselor, Student
Description	Admin will assign students to counselor and student can meet to counselor for online counseling
Trigger	Online counseling with be initiated between student and counselor

Pre-conditions	- Student has to be logged in - Student has to be assigned to a counselor
Post-conditions	
Main Success Scenario	1. Admin will assign students to counselor 2. Student can request for counseling session with counselor 3. Counselor can do online counseling with student upon his request
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

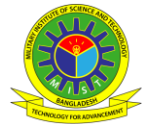## 4.45 UC – Sexual Harassment Report Management

Actor	Action
Student	- Go to Report Section - Enter harassment report with details
Admin	- Receive harassment report and take necessary actions

	Harassment Report
Primary Actor(s)	Admin, Student
Description	Student will launch harassment report and admin will take action
Trigger	Harassment report will be triggered
Pre-conditions	- Student has to provide necessary info against the report
Post-conditions	
Main Success Scenario	1. Student will put harassment report 2. Admin will take actions required
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.46 UC- Add Alumni

Actor	Action
Official Admin	- Go to Add Alumni and create new alumni inserting student registration number - Click save and exit
Alumni	- New account will be opened for the alumni with login credentials

	Add Alumni
Primary Actor(s)	Admin
Description	Admin will add alumni database
Trigger	Alumni will be added in alumni database
Pre-conditions	- User need to be logged in

	- New Alumni must be student of MIST (for check add his/her registration number)
Post-conditions	- User will be directed to add information - If user's information present in current database then prefill
Main Success Scenario	3. Add Alumni user to database 4. Save and Close
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.47 UC- Update Information

Actor	Action
Official Admin	- Go to Alumni - Search by name and view info in data table - Click edit icon to edit the info
Alumni	- Go to Alumni - In the data entry form, put necessary information (professional. educational, personal) - Click save and exit

	Update Alumni
Primary Actor(s)	Alumni User
Description	Alumni user will update his/her personal/professional information
Trigger	Alumni will update his information
Pre-conditions	- User need to be logged in
Post-conditions	- User will be directed to add information
Main Success Scenario	1. Alumni professional/educational/personal information will be updated 2. Save and Close
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.48 UC- Collect Transcript

Actor	Action
Instructor	- Go to Transcript - Select the transcript he wants to collect - Provide information for transcript - Click request - In data table, he can view the request he has made

	- If in status column, it is shown ready then he will come to office and collect
Official Admin	- Go to Transcript under Alumni - Check the list of requests - Prepare transcript - Once made ready, click done beside the request - Click save and exit

	Transcript
Primary Actor(s)	Alumni User
Description	Alumni user will request for academic transcript
Trigger	Transcript paper request will be forwarded to office
Pre-conditions	- User need to be logged in - Provide necessary information for transcript - Check if user has permission to collect any particular transcript
Post-conditions	- User will be directed to send request for transcript
Main Success Scenario	1. Once request processed and transcript is done, status will be shown and user will collect from office
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.49 UC – Online Service Application (Example – Car Sticker)

Actor	Action
Employee/Student	- Go to Online Application - Select Category (example – car sticker etc.) - Provide necessary details and pay online - Send request - If sticker ready, system will show status updated
Official Admin	- Go to Online Application - Collect the requests - Prepare/process the request - If processed/ready, update the request status

	Online Application
Primary Actor(s)	Official Admin, Employee, Student
Description	Request for any service (example - car sticker etc.) online
Trigger	Request will be reviewed and processed by office and user will get the update
Pre-conditions	- User need to be logged in - Provide necessary information for application - Check if user has permission to collect any particular service
Post-conditions	- User will get the service online
Main Success Scenario	1. User will request for online service providing necessary information

	2. The admin will update the status of request once the request is processed
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.50 UC – Civil Employee Performance Report

Actor	Action
Official Admin	- Go to Employee and under that Civil Employee Performance - Put the information against the employee - Save and exit

	Civil Employee Performance Report
Primary Actor(s)	Official Admin
Description	Store civil employee performance data
Trigger	Civil employee performance data will be stored for future reference
Pre-conditions	- User need to be logged in - Provide necessary information for data form
Post-conditions	- Civil Employee performance data will be stored
Main Success Scenario	1. Admin will store the data against the employee based on his performance 2. The performance data will be stored for future reference
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.51 UC – Budget Management
N.B.: This module is a vast section and is not directly linked to academic. So, this part will be reconsidered later once the academic part is implemented

Actor	Action
Official Admin	- Go to Budget and put necessary info

	Budget Management
Primary Actor(s)	Official Admin
Description	Store budget
Trigger	Admin will input budget related data
Pre-conditions	- User need to be logged in - Provide necessary information for data form
Post-conditions	- Budget related data will be stored

Main Success Scenario	1. Admin will store the budget data 2. The budget data will be stored for future reference 3. Reports will be generated based on budget implementation process
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.52 UC – Finance & Audit Management
N.B.: This module is a vast section and is not directly linked to academic. So, this part will be reconsidered later once the academic part is implemented

Actor	Action
Official Admin	- Go to Finance and store data related to financial activities

	Budget Management
Primary Actor(s)	Official Admin
Description	Store Financial activities
Trigger	Admin will input finance related data
Pre-conditions	- User need to be logged in - Provide necessary information for data form
Post-conditions	- Finance related data will be stored
Main Success Scenario	1. Admin will store the finance data 2. The finance data will be stored for future reference 3. Audit reports will be generated based on finance data collected
Extensions	
Priority	High
Special Requirements	N/A
Open Questions	???

4.53 The following modules are already built by MIST and will be integrated to the MCAM by API

- Student Hall Management
- Library Management
- Student Admission
- Mess Management
- Official Web Management
- Procurement Management
- SMS Management

5. Requirements
N.B.: This section will be updated by the software architect/consultant.

5.1 Performance Requirements

All pages should be loaded within three seconds or less, assuming a broadband connection on the client side. The system should support as many as 1000 online users simultaneously with negligible response delay.

5.2 Safety and Security Requirements

Only authorized users will be permitted to access the system to manipulate data. Safety and Security needs to be addressed to handle the following situations:
- Exposure of sensitive personal, institution, exam and other data among employees
- Loss of sensitive personal, institution, exam and other data outside the enterprise
- Unauthorized updates of personal, institution, exam and other data
- Sharing data with external organizations and service providers.

5.3 Software Quality Attributes

5.3.1 Usability

The web interface of the system will be designed to be concise and user-friendly, with a graphical interface to help users identify the proper choice on the screen. Users are expected to be able to use the system productively with minimal or no training.

5.3.2 Reliability and Robustness

The system should be available at all times (24 hours a day, 7 days a week) except for monthly maintenance of no more than 10 minutes. The system backup onto a second server will be performed during the maintenance time as well as once daily (at midnight) and system recovery will only be executed as necessary. In addition, the secondary server will be prepared to help recover in the event of hardware failure.

5.3.3 Functionality

The system should be able to provide right forms to the authorized user for data entry. Also it should provide right option for data modification.