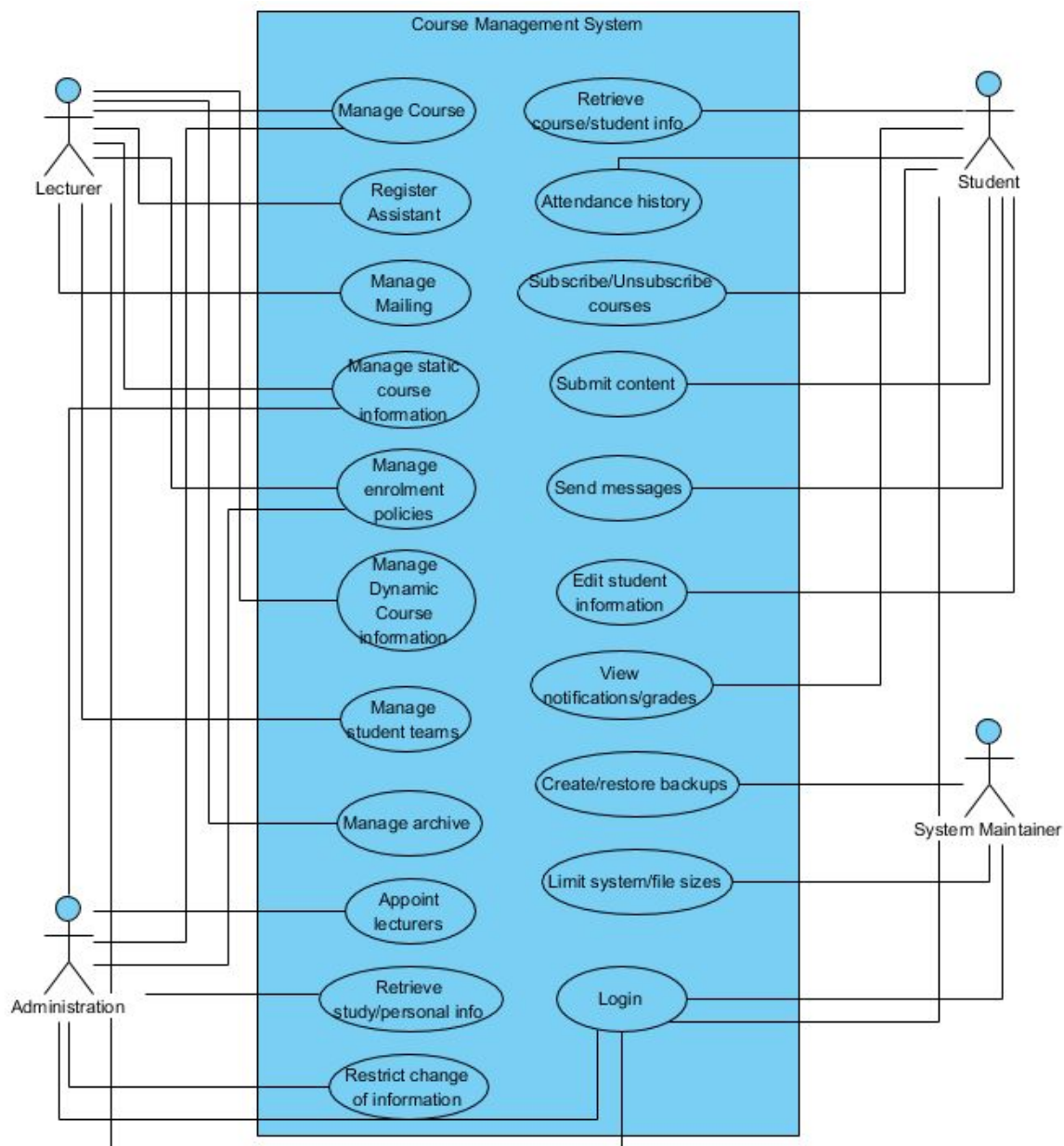## 1.0 System Requirements

Requirement elicitation activities had been previously performed, and the following is a summary of the most relevant requirements collected.

1.1 Use Case Model

The use case model in Figure 1.1 presents the most relevant use cases that support the CMS model in the system. Other use cases are not shown.

FIGURE 1.1 Use case model for the CMS System

Each of the use cases are described in the following table:

Use Case ID	Use Case	Description
UC-1	Manage Courses	The system should allow the user to view, add, upload and duplicate content to a course. User restrictions to do so should also be allowed.
UC-2	Manage Grading	Appropriate users should be allowed to view, upload, delete or change the grades of a student.
UC-3	Manage Mailing	Appropriate users should be allowed to access and use the mailing system.
UC-4	Manage Static Course Information	The system shall allow the appropriate users to view, add, or edit static course information.
UC-5	Manage Enrolment Policies	The system shall allow the appropriate users to view, add, or edit the enrolment policies.
UC-6	Manage Dynamic Course Information	The system shall allow the appropriate users to view, add, or edit static course information.
UC-7	Manage Student Teams	The system shall allow the appropriate users to view, add, or edit student teams.
UC-8	Manage Archives	Users should be able to view, use, duplicate a course/ system archive.
UC-9	Retrieve Course/Student Information	Appropriate users should be able to view course information or the

		information of a student in that course.
UC-10	Retrieve Attendance History	The system should allow the user to check the attendance history of a student.
UC-11	Subscribe/Unsubscribe Courses	The system should allow students to subscribe/unsubscribe to a course.
UC-12	Submit Content	The system should allow a user to submit course content online.
UC-13	Send Messages	The system should allow a user to send messages to another user.
UC-14	Edit Student Information	The system should allow appropriate users to edit the student information for a course.
UC-15	View Notifications	The system should allow all users to view course/system notifications.
UC-16	Create/Restore Backups	The system should allow the maintainer to create backups and restore system if needed using previous backups.
UC-17	Limit System/File Sizes	The system should allow the maintainer to limit file sizes being uplaoded by the lecturers or students.
UC-18	Appoint Lecturers/Assistant	The system should allow the appropriate users to appoint lecturers/assistant lecturers for a course

UC-19	Retrieve Educational/Personal Information	The system should allow the retrieval of educational or personal information of any user.
UC-20	Restrict change of Information	The system should allow the appropriate users to restrict the information that can be changed by any other uses.
UC-21	Login	The system should allow all users to securely login in to the system and be able to use all the features they are allowed.

1.2 Quality Attribute Scenarios

In addition to these use cases, a number of quality attribute scenarios were elicited and documented in the table below. The associated use case for each scenario is also included.

ID	Quality Attribute	Scenario	Associated Use Cases
QA-1	Performance	Sometimes huge file loads are sent to the system at peak load. The system processes the file size and limits the uploading size and time.	UC-17
QA-2	Modifiability	A lecturer can upload courses and content for it in real time or scheduled.	UC-1
QA-3	Availability	The system should always be up for all users, restricting access depending on user type. If the system goes down it should come back up in a few hours. $hours/month downtime allowed.	UC-16
QA-4	Usability	A user logs in to the system and can pick from a list of options to view, edit, update or upload information.	UC - 9 - UC - 15, UC -18, UC-21
QA-5	Security	The system keeps tracks of changes done by every user and only allows user to change the information they have access to.	UC-20

1.3 Constraints

Finally, a set of constraints on the system and its implementation were collected. They are shown in the below table.

ID	Constraint
CON-1	Limit Downtime to 4h/month. Announce downtime at least 48 hours in advance. Downtime only during low-intensity hours
CON-2	Must be user friendly. Support Dutch and English. Max 3 clicks to reach any content. Single login to access all content. Consistent UI
CON-3	All content must be accessible by disabled users
CON-4	Allow to import calendar and other data
CON-5	Must work and synchronize with secondary universities

1.4 Architectural Concerns

As being a greenfield development and as we are new developers and new to the ADD process the team started off with no architectural concerns.