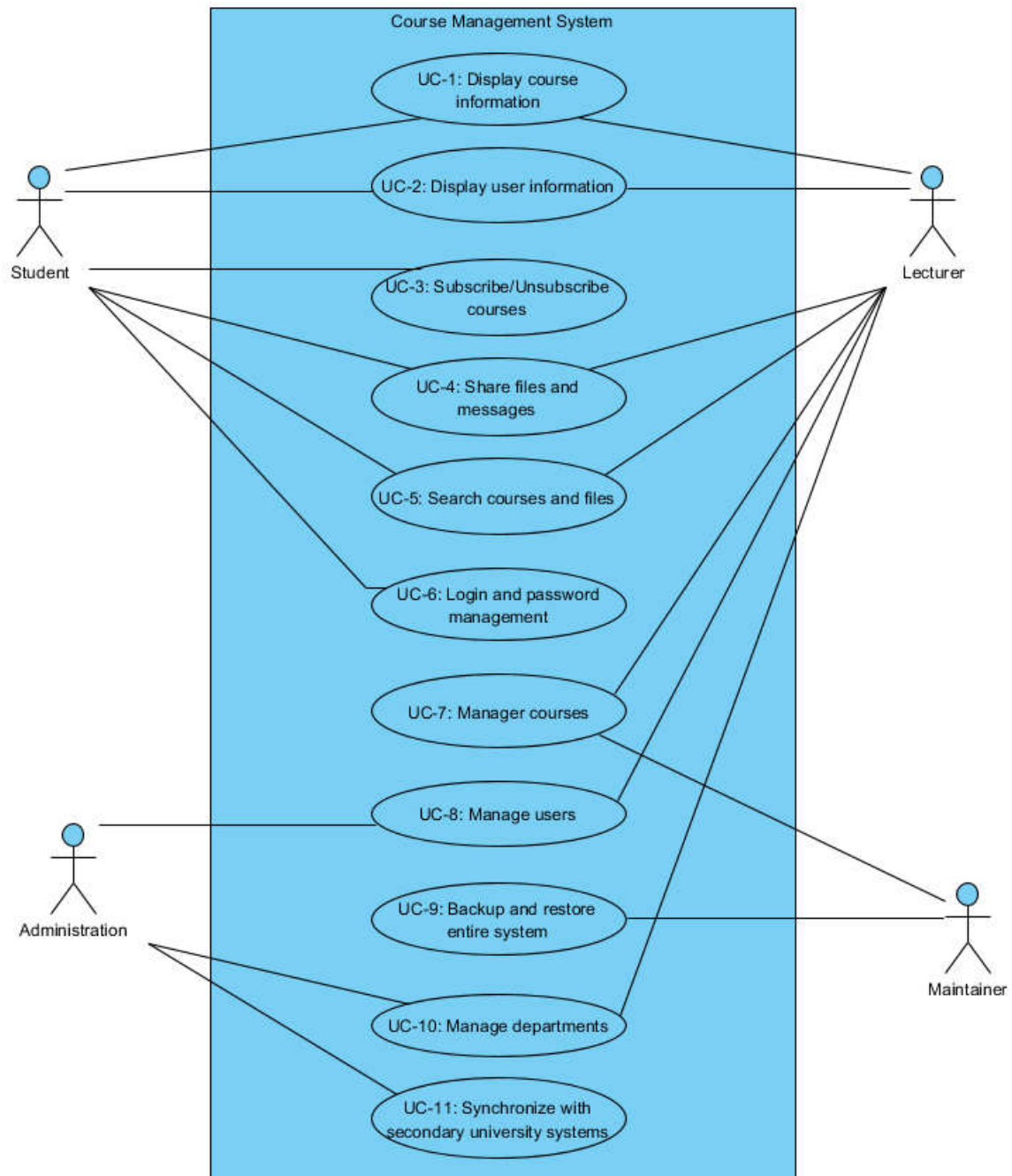**Use case model**

Use Case

Use Case	Description
UC-1: Display Course Information	Course infromation is available to be viewed by students who are enrolled in the course and lecturers who are teaching the course
UC-2: Display user information	Users information is available to be viewed by the user and lecturer
UC-3: Subscribe/Unsubscribe Course	Student can enroll or drop courses
UC-4: Share files and messages	Students and lecturers can communicate through messages and are able to share files
UC-5: Search Courses and Files	User is able to search for particular courses or files by name
UC-6: Login and password management	Any user of the CMS should be able to login and/or change their password
UC-7: Manager Course	Teachers and administrators should be able to manage the course content for a particular course. They can add and remove files to the course portal as needed.
UC-8: Manage Users	Administrators and teachers should be able to manage user accounts
UC-9: Backup and restore entire system	Maintainer should be able to backup system and restore it
UC-10: Manage Departments	Administrators should be able to manage departments
UC-11: Synchronize with secondary university systems	

Quality Attributes Scenario

ID	Quality attribute	Scenario	Associated Use Case
QA – 1	Security	A secure login environment for students prevents students from accessing each other's information	UC – 6 & UC – 8
QA – 2	Availability	The system downtime does not exceed 4 hours/month	UC – 9
QA – 3	Accessibility	A blind user is able to login and use the CMS through the use of screen readers and prompts	UC – 8
QA – 4	Interoperability	The system is synchronized with secondary university systems	UC – 11
QA – 5	Scalability	Additional courses, departments, lecturers and students are added according to capacity requirements	UC – 4, UC – 8 & UC – 10
QA – 6	Maintainability	The system is backed up routinely to ensure loss of data does not prevent proper functionality	UC – 9
QA – 7	Performance	The system is able to pull up course information in a few seconds after it is requested by a lecturer	UC -1 & UC – 2

Constraints

ID	Constraint
CON – 1	The system should not be down for more than 4 hours a month
CON – 2	The system must be able to be synchronized with a secondary university system
CON – 3	Students are not allowed to create passwords of length less than 10 characters
CON – 4	CMS must be accessible by a web browser such as Chrome, Edge, Firefox and mobile browsers
CON – 5	Daily incremental system backups are required
CON – 6	All course notifications during the length of semester must be stored and visible

Architectural concerns

ID	Concern
CRN-1	Establishing an overall initial system structure
CRN-2	Understanding of teams knowledge of skills and abilities
CRN-3	Allocate work to members of the team