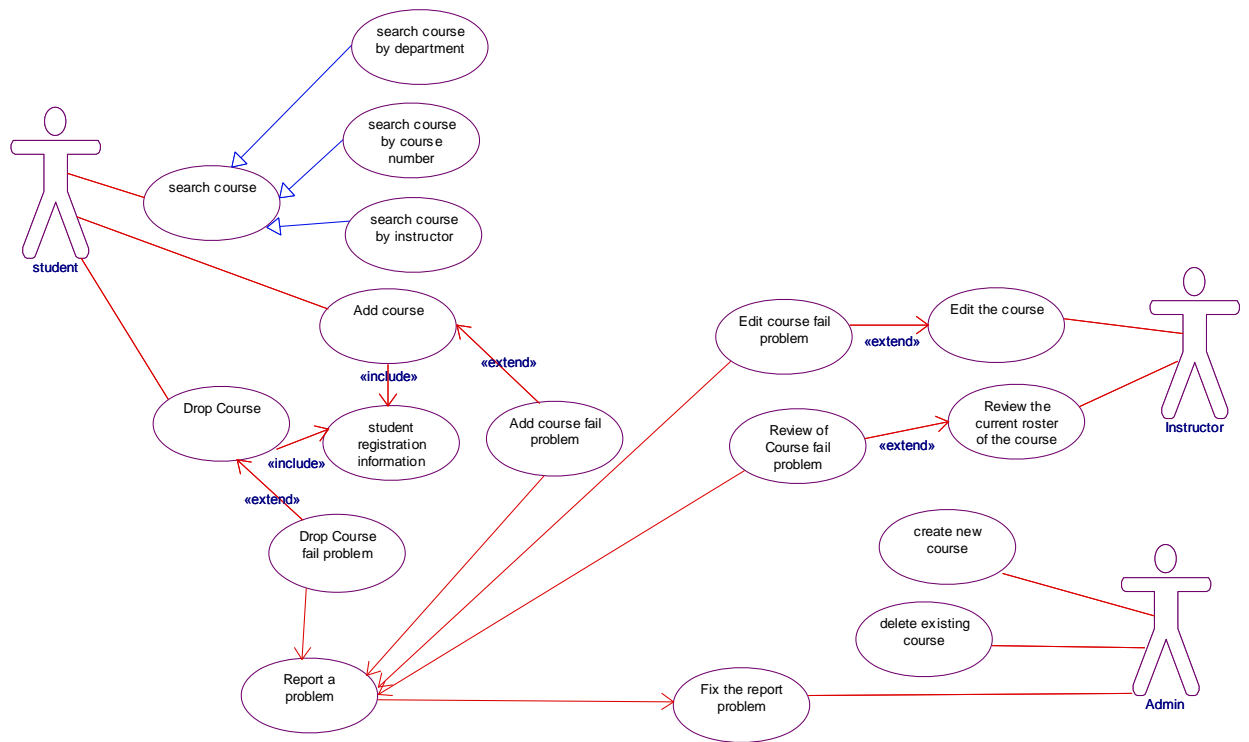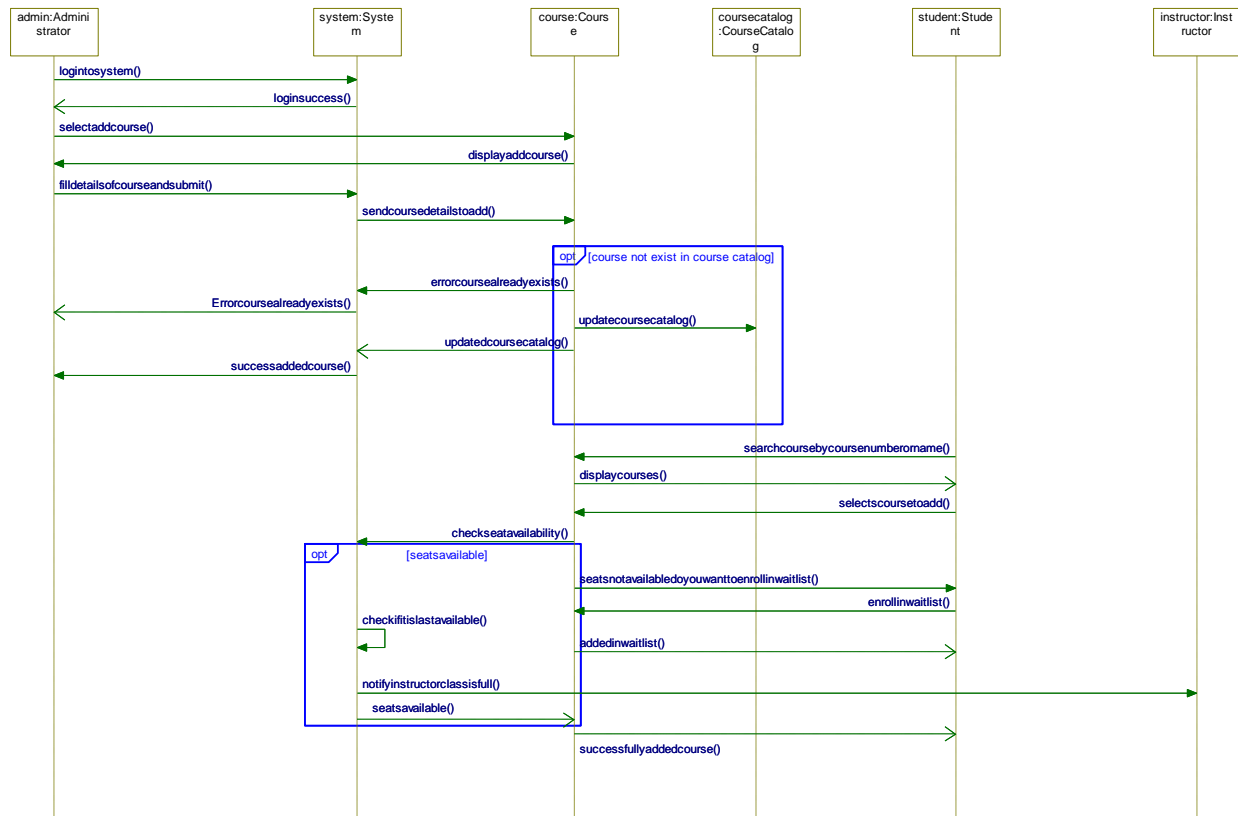1. Use case Diagram for Course registration:

2. Usecase for course adding:

Use Case Name	Adding a course in the course registration system
Scope	Course Registration System
Primary Actor	Admin
Preconditions	Admin should be logged in to the system
Guaranteed (Post Conditions)	Course is added in to the course registration system
Main Success Scenario	1. Admin do a login to the system. 2. Admin select's Add Course in the Course registration system. 3. Admin fills the course details like course number and course name. 4. Admin submits the filled details of course. 5. System updates the course details of newly added course in the course catalog. 6. When course details are updated in the course catalog, system provides confirmation message to admin. 7. Student searches the course by course name or course number. 8. Student selects the course and add the course. 9. System checks for the seat availability and if seats are available, student will be added to the course. 10. System checks if it is the last seat for the course, it will notify the instructor course is full.
Extensions	5a. System checks if course already exists, if it is then display error message course already exists. 9a. System checks if no seats are available, systems asks student to enroll in waiting list, and then adds student in waiting list.
Special Requirements	Security: Courses should be displayed to only registered users.
Frequency	When new course is introduced, admin adds new course to course registration system.
Miscellaneous	

Sequence Diagram:

3. State Diagram of Course: