**Requirements for Course Management System**

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Functional Requirements

1. The system shall have three roles for users: students, advisors, and administrators.
2. The system shall allow users to have only one role.
3. The system shall allow users with the student role to enroll in unarchived courses from the course catalog.
4. The system shall allow users with the student role to unenroll from courses they are currently enrolled in.
5. The system shall allow users with the student role to view their schedule.
6. The system shall not allow users with the student role to enroll in a course without meeting the courses prerequisites unless they have an override from a user with the advisor role.
7. The system shall allow users with the advisor role to override course prerequisites for users with the student role.
8. The system shall allow users with the advisor role to view their advisees schedule.
9. The system shall allow users with the administrator role to create new courses in the course catalog.
10. The system shall allow users with the administrator role to remove courses from the course catalog.
11. The system shall allow users with the administrator role to modify courses in the course catalog.
12. The system shall allow users with the administrator role to archive courses in the course catalog.
13. The system shall allow users with the administrator role to unarchive courses in the course catalog.
14. The system shall allow users with the administrator role to create new users.
15. The system shall not allow anyone without the administrator role to create new users.
16. The system shall allow users with the administrator to assign student or advisor roles to users.
17. The system shall not allow users without the administrator role to assign student or advisor roles to users.
18. The system shall not allow users with the student or advisor role to change their role.
19. The system shall allow all users to view all courses in the course catalog.
20. The system shall require all users to log in with a user name and password.
21. The system shall store user and course data in the course management database.
22. The system shall store the academic record users with the student role in the course management database.
23. The system shall require the course management database to be secured with a password.

Non-Functional Requirements

1. The system shall require all users to be associated with a first name, last name, university identification number, and email.
2. The system shall require users with the student role to be associated with a major field of study.
3. The system shall validate the user’s username and password prior to allowing them to login to the system.
4. The system shall allow users with the student role to only register for eighteen (18) credit hours maximum per term.
5. The system shall register users with the student role for courses within three (3) seconds after the user submits their registration information.
6. The system shall require usernames to be composed of the first two letters of the users first name, the users last name, third and fourth digit of the year the user joined the university.
7. The system shall require passwords to be at least eight (8) characters in length.
8. The system shall require passwords be composed of alphanumeric uppercase and lowercase characters.
9. The system shall not allow any symbols other than alphanumeric characters to be part of the user’s password.
10. The system shall hash and salt the user’s password prior to storing it in the user datastore.
11. The system shall hash and salt the user’s password before verifying it against their stored password.
12. The system shall require all courses to be associated with a name, description, and number of credit hours.
13. The system shall require all unarchived courses to be associated with a term, dates and time offered, and instructor.
14. The system shall have a login interface.
15. The system shall allow the user to enter their username and password on the login screen.
16. The system shall have a home interface.
17. The system shall display an option to view the course catalog on the home interface.
18. The system shall display options to enroll in courses, unenroll from courses, and view their course schedule on the home interface if the user has the student role.
19. The system shall display an option to list advisees on the home interface if the user has the advisor role.
20. The system shall display options to administrate courses and administrate users on the home interface if the user has the administrator role.