**Course Registration System Problem description:**

Login use case describes how a user logs into the Course Registration System. Maintain Professor Information use case allows the Registrar to maintain professor information in the registration system. This includes adding, modifying, and deleting professors from the system. Maintain Student Information use case allows the Registrar to maintain student information in the registration system. This includes adding, modifying, and deleting Students from the system. Register for Courses use case allows a Student to register for course offerings in the current semester. The Student can also update or delete course selections if changes are made within the add/drop period at the beginning of the semester. The Course Catalog System provides a list of all the course offerings for the current semester.

Close registration use case allows a Registrar to close the registration process. Course offerings that do not have enough students are cancelled. Course offerings must have a minimum of three students in them. The billing system is notified for each student in each course offering that is not cancelled, so the student can be billed for the course offering. Select courses to teach use case allows a Professor to select the course offerings from the course catalog for the courses that he/she is eligible for and wishes to teach in the upcoming semester. Submit Grades use case allows a Professor to submit student grades for one or more classes completed in the previous semester. View report card use case allows a Student to view his/her report card for the previously completed semester.

**Functional Requirements**

***FR1: Login***

The student enters his name with password. If the student enters an invalid name or password or both, then system displays an error message. The system validates the entered name with password. The student gets log in.

***FR2: Maintain Professor Information***

The Registrar must be logged into the system . The system requests the Registrar to enter the professor information which includes name , date of birth, social security number, status ,department etc. The Registrar enters the required information. The system assigns a unique id number to the professor. The professor is added to the system. The system provides the Registrar with the new professor id. The system requests that the Registrar enter the professor id. The Registrar enters the professor id. If a professor with the specified id number does not exist, then the system displays an error message. The system retrieves the professor information. The Registrar makes the desired changes to the professor information. The Registrar updates the necessary information, the system updates the professor record. To delete the entry of a Professor from the system, the system prompts the Registrar to confirm the deletion of the professor. If in the Deletion process Registrar decides not to delete the professor, then the delete operation is cancelled. The Registrar verifies the deletion. The system deletes the professor from the system.

***FR3: Maintain Student Information***

The Registrar must be logged onto the system . The system requests that the Registrar enter the student information. This includes: name, date of birth , social security number, status, graduation, date etc. Once the Registrar provides the requested information, the system assigns a unique id number to the student. The student is added to the system. The system provides the Registrar with the new student id. To update student’s information, The system requests that the Registrar enters the student id. The Registrar enters the student id. If a student with the specified id number does not exist, then the system displays an error message. The system displays the student information. The Registrar makes the desired changes to the student information. Once the Registrar updates the necessary information, the system updates the student information. To delete a student from the system, The system requests that the Registrar enter the student id. The Registrar enters the student id. The system displays the student information. The system prompts the Registrar to confirm the deletion of the student. The Registrar verifies the deletion. If in the Deletion process Registrar decides not to delete the student, then the delete operation is cancelled. The system deletes the student from the system.

***FR4: Register for Courses***

The Student must be logged into the system. The system retrieves a list of available course offerings from the Course Catalog System and system displays the list to the Student. The Student selects 4 primary course offerings with 2 alternate course offerings from the list of available offerings. Once the student has made the selections, the system creates a schedule for the Student containing the selected course offerings. To update the schedule the system retrieves the Student’s current schedule (e.g., the schedule for the current semester). If the system is unable to retrieve the Student’s schedule, then an error message is displayed. The system retrieves a list of available course offerings from the Course Catalog System. It displays the list to the Student. If the system is unable to communicate with the Course Catalog System, then the system will display an error message to the Student. The Student may update the course selections on the current selection by deleting , adding new course offerings. The Student selects the course offerings to add from the list of available course offerings. The Student also selects any course offerings to delete from the existing schedule. Once the student has made the selections, the system updates the schedule for the Student using the selected course offerings. To delete a schedule, the system retrieves the Student’s current schedule (e.g., the schedule for the current semester). If the system is unable to retrieve the Student’s schedule then an error message is displayed. The system prompts the Student to confirm the deletion of the schedule. The Student verifies the deletion. The system deletes the Schedule. If the schedule contains “enrolled in” course offerings, then the Student is removed from the course offering.

***FR5: Close Registration***

The system checks to see if registration is in progress. If it is in progress, then a message is displayed to the Registrar that the registration is in progress because the Close Registration processing cannot be performed if registration is in progress. For each course offering, the system checks if a professor has signed up to teach the course offering with at least three students have registered. The system commits the course offering for each schedule that contains it. If, there is no professor signed up to teach the course offering, the system will cancel the course offering. For each schedule, the system checks the schedule. If the schedule does not have the maximum number of primary courses selected, the system attempts to select alternates from the schedule’s list of alternates. . The first available alternate course offerings will be selected. If no alternates are available, then no substitution will be made. For each course offering, the system closes all course offerings. If the course offerings do not have at least three students at this point then the system cancels the course offering. The system cancels the course offering for each schedule that contains it. The system calculates the tuition owed by each student for his current semester schedule and system sends a transaction to the Billing System. The Billing System will send the bill to the students, with a copy of their final schedule. If the system is unable to communicate with the Billing System,then the system will attempt to re-send the request after a specified period.

***FR6: Select Courses to Teach***

The Professor must be logged into the system. The system retrieves the list of course offerings the professor is eligible to teach for the current semester. The system also retrieves the list of courses the professor has previously selected to teach. The professor selects or de-selects the course offerings that he wishes to teach for the upcoming semester. The system removes the professor from teaching the de-selected course offerings. The system verifies that the selected offerings do not conflict (i.e., have the same dates and times) with each other or any course offerings that the professor has previously signed up to teach. The system updates the course offering information for each offering the professor selects (i.e., records the professor as the instructor for the course offering). If the systems find a schedule conflict when trying to establish the course offerings the Professor should take, the system will display an error message indicating that a schedule conflict has occurred.

***FR7: Submit Grades***

The Professor must be logged in. The system displays a list of course offerings to the Professor. The Professor selects a course offering. If the Professor did not teach any course offerings in the previous semester then system will display an error message. The system retrieves a list of all students who were registered for the course offering. The system displays each student and any grade that was previously assigned for the offering. For each student on the list, the Professor enters a grade: A, B, C, D, F, or I. The system records the student’s grade for the course offering. If the Professor wishes to skip a particular student, the grade information can be left blank , filled in at a later time. The Professor may also change the grade for a student by entering a new grade.

***FR8: View Report Card***

The Student must be logged in. The system retrieves the grade information for each of the course offerings the Student completed during the previous semester. If the system cannot find any grade information from the previous semester for the Student then a message is displayed. 