SYSTEMS INTEGRATION AND ARCHITECTURE MILESTONE



Emilio Jacinto Street, Población District, Davao City, Davao del Sur, Philippines

In fulfillment of the Requirements for the

CS 2239 Software Engineering 1

By

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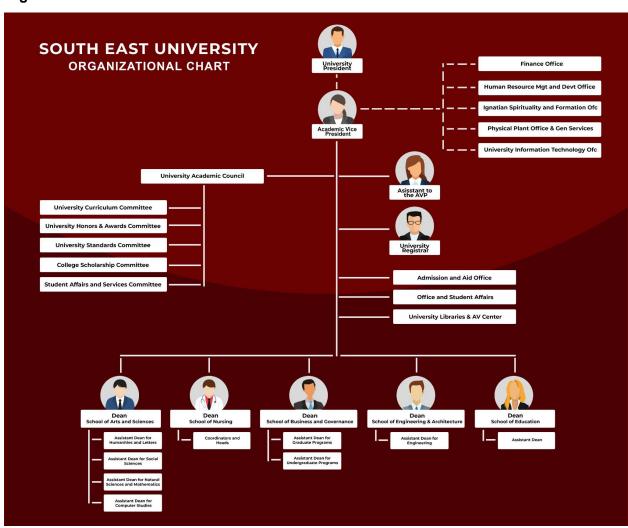
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SIA Milestone: Preliminary Investigation Report

Organization Name: South East University (SEU)
Industry Type: University (Education Institution)
Organization Address: Roxas Avenue, Davao City
Organization's Contact/Representative Details:

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Organizational Chart/Structure:



Organization Brief History

The University President thought of starting an educational institution primarily to provide learning opportunities for the members of the society. After years of preparation, the South East University came to fruition. South East University has always been known for its competent classes, values, and students. However, competence is not sufficient enough to expand the community that exists in the university. As the population of the university increases, student data proliferates, which weighs a considerable responsibility to both the university and its registrar. Because of their limited resources, the university intends to develop a system that transfers data sufficiently, quickly, and efficiently, allowing them to improve and expand the community in the university continuously.

Business Process

The Admission Office handles the incoming students who are interested in enrolling in the university. When aspiring students apply for the entrance examination, the Admission's Office requires them to provide their basic information such as their name, birthdate, address, contact numbers, and senior high school name. To complete the process, students have to make their payment with their cashier, which would lead them to receive an "Entrance Examination Schedule" from the Admissions Office. The results from the examination will be processed for at least five working days. Once the examination results have been announced, students must claim their Acceptance Letter, which is vital during enrollment. The student must comply with all necessary requirements such as the latest Report Card, Birth Certificate, and Medical Certificate. If the student intends to pursue the semester in the university, there are three different programs available for the student: The Undergraduate, the Postgraduate and the Graduate; each program offers different courses.

For the SEU's enrollment procedure, the student must head to their department head for evaluation. If the student is new, the student must present their admission slip for evaluation. Otherwise, for the existing student, they must present their previous semester registration form. After finishing this process, the student can choose the subject in the table of courses. A student is given a controlled registration form (i.e., a form with a control number) bearing their name, programme, year level, and section (if applicable). The student then fills up the table of courses to be taken in the registration form. The student then goes to different departments where they will be choosing which classes are suited for their schedule, curriculum, and intent. If the course offering is available (i.e., the class is available and has an available slot), the student will be given a card that will ensure a reservation in the class. After securing the necessary class

cards, the student will be proceeding to the finance office to determine the overall payment and fees needed to enroll for the semester. Finally, the student goes to the cashier to pay either the required down payment or the total amount. The cashier will be signing the registration form and removing the cashier portion of the form. The student then goes to the registrar's office to hand over the registrar's copy of the registration form. A folder is assigned to each student at the registrar's office to hold all documents and registration forms of a student.

Regarding the adding and dropping of the subject, the process will be the same as the initial course registration. A student usually is assigned a single degree programme, but exceptions are given to academically gifted students to pursue two different programmes. Upon graduation, the student will also receive two diplomas. After completing a minor programme, a student will receive a certificate of completion.

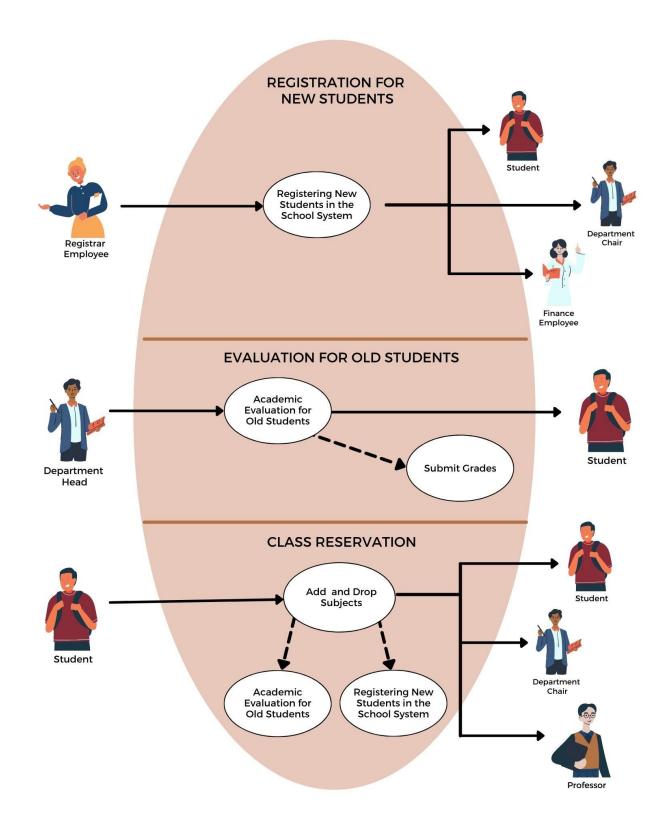
For the grade handling procedure, the method is traditionally the same. The professor collects the class cards and divides the grading intervals into four grading periods: the 1st Quarter, Second Quarter, Third Quarter, and Final Quarter at the start of the classes. Each professor maintains a class record for every course offering that he/she teaches. After the professor completes the computation of grades, the professor will be handing out the card to the respective students. The professor will then create a class grade report which they will submit to the registrar's office. The registrar, in turn, will update each of the student's registration cards with the grade from the teacher's report.

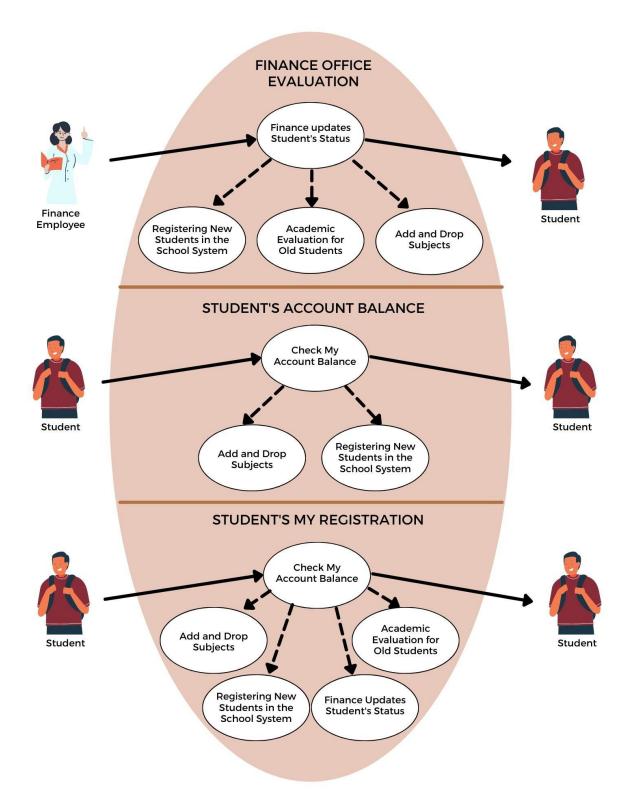
Identified Problems

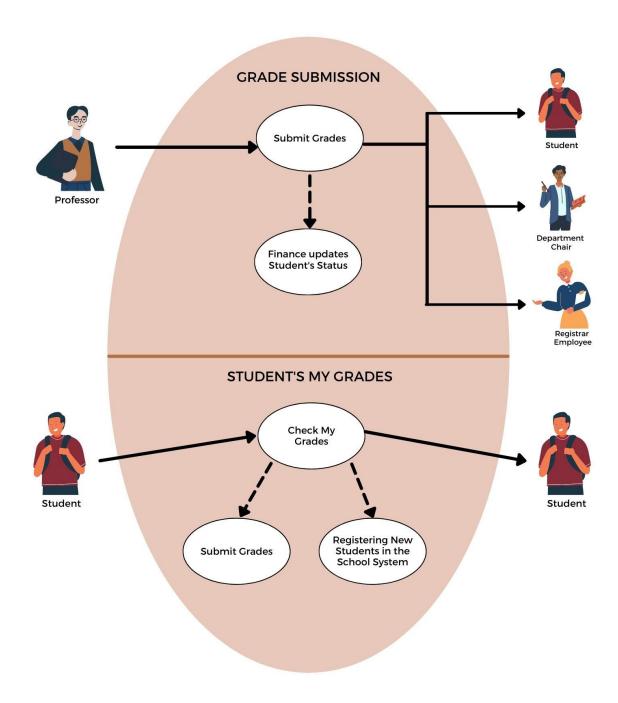
Generally, the process takes a lot of time for the whole process to be completed. The Subject Registration takes an extended amount of time, given that during that time, the room might be extensively occupied by students with the same purpose and intention. The Registration Form is too traditional, which means that physical copies are too vital and fragile for student data. Since the system does not entirely depend on a versatile database, the registrar must keep an extensively secure record. With the amount of population the university might carry, a transaction between the student and the registrar might take quite a while. The Adding and Dropping of subjects require a trace back to the first steps of registration, which can take up a lot of the student's time. The distribution, nonetheless, while usually the same traditional method used, requires an effort for the professor to distribute the card to the students individually, resulting in several different factors that might become a predicament for the students. Some factors include: students might not receive their grades due to their absence;

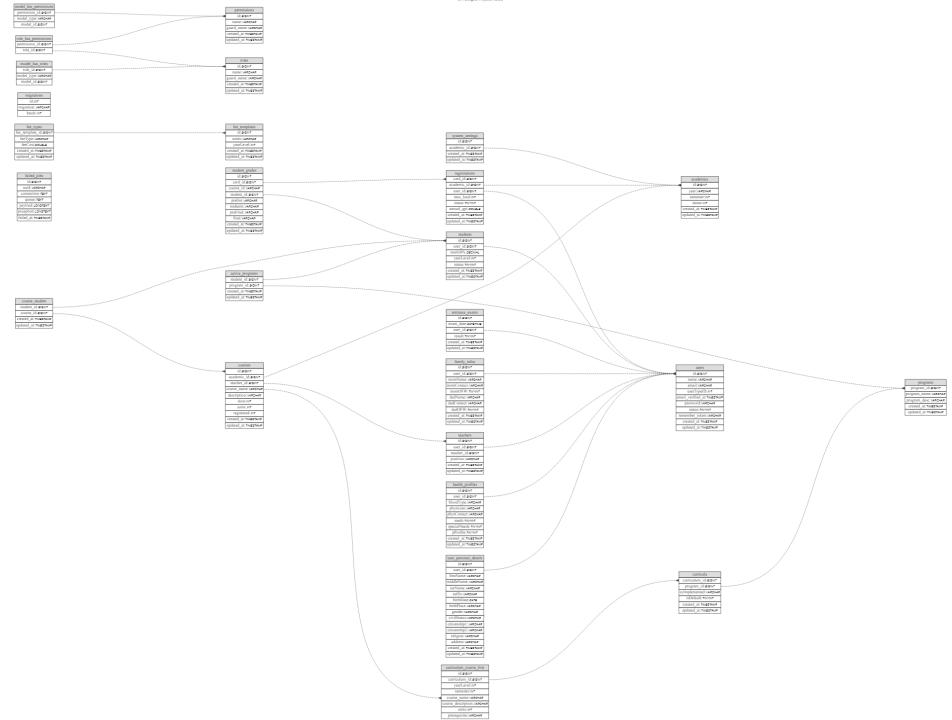
the distribution of physical cards takes up time for the professor, and the error of grades might become an issue since there is no consequential duration before a certain grade is deemed confirmed. Overall, the system can be quite inefficient and tacky.

Use Case Diagram (Scope 2)









Events table (Scope 2)

Event	Trigger	Source	Use Case	Response	Destination
Registrar wants to evaluate new students for enrollment	Admission list	Registrar Employee	Registering New Students in the School System	Creates an account	Student/ Finance Employee/ Department Chair
Department head wants to view previous semester registration for academic evaluation	Evaluation	Department Chair	Academic Evaluation for Old Students	Old students can proceed to add and drop subjects	Student
Student wants to reserve for a class	My Registration	Student	Add and drop Subjects	Class Slot Reservation	Registrar/ Professor/ Department Chair
Finance wants to tagged Students as enrolled	Finance	Finance Employee	Finance updates Student's status	Update on Student's Status in My Registration	Student
Students checks for the required payment	My Account Balance	Student	Check My Account Balance	Statement of Account and Breakdown of Fees	Student
Student wants to check their enrollment status	My Registration	Student	Check My Registration Status	My Registration status	Student
Class Professor wants to submit grades	Grades	Professor	Submit Grades	Update on Student's My Grades	Student/ Registrar/ Department Head
Students wants to check their grades	My Grades	Student	Check My Grades	Table of grades from 1st,2nd,3rd and final quarter	Student

Use Case Description:

Use case name:	Registering New Students in the School System		
Scenario:	Once the Admission office has the official list of new students, the Registrar must formally register the student to the system by making their official university account.		
Trigger event:	The Registrar has received the official list of new students (admission list) containing data and information from the student.		
Brief Description:	The Registrar has the official list of new students and will evaluate each student by creating their designated university account.		
Actors:	Admission office Registrar Employee		
Related Use Cases:			
Stakeholders:	Admission Office: Creates the official list of New students Registrar: Creates students official university account		
Preconditions:	The Admissions Office must have the official list of new students containing their data and information.		
Postconditions:	The student must already have their official university account created by the Registrar employee. The finance office and Department chair will also have a copy of the student's account on their system.		
Flow of Events:			
	Actor	System	
	The Admission office creates and gives the official list of new students to the Registrar. The Registrar will evaluate each student from the Admissions list. The Registrar initiates the creation of each student account.	3.1 The Registrar will register the students to the university system by creating their official university account. In this process, the student will be given a unique ID number, Card Number, username, password, and max load.	
Exception Conditions:	1.1 If the student is not on the official list of new students.	f new students, the registrar cannot evaluate	

Use case name:	Academic Evaluation for Old Students		
Scenario:	Whenever the semester ends, existing students must undergo the process of adding and dropping subjects before undergoing the process of enrollment. However, certain subjects must have a passing remark before the student proceeds to the next subject in the curriculum. The Department Head will be evaluating each student's pre-requisite grade to see if they are eligible to take the next subject or not.		
Trigger event:	The semester has ended, and grades have been encoded; an academic evaluation is needed to enroll for the next semester.		
Brief Description:	After the semester ends, students will be evaluated if they are eligible to take specific subjects. The Department Head will be evaluating the student's pre-requisite subject status by viewing their My Registration.		
Actors:	Department Head		
Related Use Cases:	Includes: Submit Grades		
Stakeholders:	Professors: Submits and uploads the final grades of the students Students: Wants to Enroll for the next semester Department Head: Views the student's My Registration		
Preconditions:	The student must be an existing student and must have a record from the previous semester. The student must have applied to take a subject with a pre-requisite from the previous semester.		
Postconditions:	The student can proceed to add and drop subjects and reserve a class slot.		
Flow of Events:			
Flow of Events:	Actor	System	
Flow of Events:	Actor 1. Once the semester ends, the professor will evaluate students' performance through a grading system. (Submit Grades) 2. Grades from the pre-requisite subjects will be checked by the student's respective Department Head to determine if the student is eligible to proceed in taking the next designated subject. 3. Depending on the student's grade, the Department Head will see if they are eligible to proceed to the next course. 4. The Students can reserve a class slot.	System 3.1 The system allows the student to successfully take their selected subject, given that the student passed the pre-requisite of the selected subject.	

Use case name:	Add and Drop Subjects		
Scenario:	In preparation for the next semester's classes, students are encouraged to add and drop subjects, especially if the students still need to attend specific electives, major and minor courses.		
Trigger event:	The semester is almost reaching its conclusion, and current subjects will be removed from the My Registration page in preparation for adding and dropping subjects in the following semester.		
Brief Description:	As the semester approaches its conclusion, the university system opens the add and drop in My Registration for new and existing students to design their desired schedule according to their subject's availability. Students are allowed to choose their selected professor, time, and subjects during this time, as long as it aligns with the course's curriculum. Students are also entitled to drop certain subjects if they wish to do so.		
Actors:	Students		
Related Use Cases:	Includes: Academic Evaluation for Old Stude System	ents, Registering New Students in the School	
Stakeholders:	Students: They will manually click the add button on the My Registration page and search for their desired subject/course, class schedule, and professor.		
Preconditions:	The New students had undergone the Evaluation from the Registrar. The Old students had undergone Academic Evaluation for old Students. The student must not have any pending cases in any of the university offices. The Old students must have fully paid the previous semester's remaining financial balance. If the student is adding a subject with a pre-requisite, the student must ensure that the student has a passing remark in the pre-requisite for them to take the next subject.		
Postconditions:	The student will be able to add and drop subjects on the My Registration page by searching for the subject. After searching for the subject, the student will have a list of subjects, all of which are confirmed by the students and the system. The student can reserve a class slot.		
Flow of Events:			
	Actor	System	
	The students will be designing their semester's schedule as the previous semester reaches its conclusion.	1.1 The university system opens the add and drop button in My Registration, where the students can add or drop for a particular subject, returning a list of schedules and professors available for that subject.	
	The student will be using their course's curriculum to determine the subjects they will be taking as far as their year level and semester.	2.1 The system provides the My Curriculum page that sums up the student's entire curriculum, which helps the students determine what subjects they should take within' their current year and intended semester.	
	3. After the university admin opens the My Registration page, students can search for the subject they choose to take. If they want to make any changes,	3.1 The My Registration button immediately sends to a page where they can find two distinctive buttons, the Add and Drop Button.	

	students can easily change their subject class schedule.	3.2 The Add Button will have a modal popup that shows a search bar, a tool they can use to search for a class code (e.g. CS). 3.3 After the student searches for their intended class code, the university system will immediately take them to a page with different class offerings. Each class may vary in schedule, professor, and section. 3.4 After selecting the add button under the action table on a specific class, the desired class will be added to the My Registration. 3.5 The student will immediately be sent back to the My Registration page to view their reserved classes. 3.6 If they intend on changing the class code for a particular class, they can click the drop button on a particular subject.
Exception Conditions:		

Use case name:	Finance Updates Student's Status		
Scenario:	After the student finishes reserving subjects in My registration, the Finance Office will assess and evaluate all the necessary fees for the semester. Once the student paid the required payment, the Finance employee will evaluate each student by updating their status to "Enrolled" to signify that they are officially enrolled for that semester.		
Trigger event:	Students are done adding and dropping subjects		
Brief Description:	After the add and drop phase, the system will automatically generate fees to the student's My Account Balance. The finance employee will be in charge of updating the student's status in My Registration.		
Actors:	Student Finance Office Employee		
Related Use Cases:	Includes: Registering New Students in the Students, Add and Drop Subjects	School System, Academic Evaluation for Old	
Stakeholders:	Finance Office: Responsible for handling the different generated fees projected in the system (My Account Balance), changing the status of a student.		
Preconditions:	Old/Existing students must have undergone the process of adding and dropping subjects to have an accurate projection of the fees required for the semester. If the student is new, the Registrar must have already registered the student before the Finance Office assesses the student's required fees for the semester. For the old/existing student, unattended fees from the previous semester must be assessed before they can assess the following semester.		
Postconditions:	Students will officially be tagged as enrolled in the university. Students will receive a complete statement of account summary, which includes a breakdown of the fees. The My Account Balance of the student's account will be updated after the Finance Office validates every payment transaction.		
Flow of Events:			
	Actor	System	
	The Finance Office will assess and confirm each student's fees, depending on their course and department.	1.1 The registered subjects will be accounted to the system through a template of fees for each programme and year level.	
	After the add and drop process, estimated-generated fees will automatically be projected to the student's My Account Balance.	2.1 A Statement of account and Breakdown of fees will appear consisting of the generated fees in the student's My account Balance.	
	3. Students will be tagged as "Enrolled" after the students suffice the required payment and after the Finance Office confirms the validity of the payment transaction.	3.1 If the payment has been received, the Finance employee will update the student's status as "Enrolled." 3.2 If payment had not received, the Finance employee will update the student's status as "Reserved." 3.3 if students haven't made a payment until the end of the Enrollment process, the Finance Employee will update the student's status as "Not Enrolled." 3.3 Student's payment will reflect directly	

	on the My Account Balance.
Exception Conditions:	

Use case name:	Check My Account Balance		
Scenario:	A student wants to see their Statement of Account, which includes the breakdown of fees after undergoing the process of adding and dropping subjects and at the same time, check if their payment transaction with the finance department is successful.		
Trigger event:	Students want to check their Account Balance.		
Brief Description:	Students can see the complete and detailed Statement of account with a breakdown of fees starting from the Miscellaneous fees to the Academic fees, which sums up the fees accumulated for the courses taken.		
Actors:	Student Finance Employee		
Related Use Cases:	Includes: Add and Drop Subjects, Registering	g New Students in the System	
Stakeholders:	Finance Office: Updates if there are any changes in the overall university fees, discounts; confirms the payment transaction of the students. Student: Checks the My Account Balance page on their account		
Preconditions:	To access the My Account Balance page, the registrar must register the student into the university system.		
Postconditions:	The system will return a page containing the thorough Statement of account and breakdown of fees approved by the Finance Office Employee.		
Flow of Events:			
	Actor	System	
	After undergoing the process of adding and dropping subjects, students will go to	1.1 The system automatically sets the	
	the navigation bar and check their My Account Balance to view their statement of account and complete breakdown for their fees for the semester.	default fees for the miscellaneous and academic fees, according to the student's course.	
	Account Balance to view their statement of account and complete breakdown for	academic fees, according to the student's	

Use case name:	Checks My Registration Status		
Scenario:	During the enrollment and adding and dropping process, the students are bound to check whether they have successfully enrolled/reserved their desired courses.		
Trigger event:	When students undergo the state of pre-registration for their intended courses.		
Brief Description:	Students have the opportunity to check their status within' the semester and see their school information in the system. Each student will be checking their enrolled courses, reserved courses, and finished courses.		
Actors:	Student		
Related Use Cases:	Includes: Add and Drop Subjects, Registering New Students in the School System, Academic Evaluation for Old Students, Finance updates Student's status		
Stakeholders:	Finance Employee: Updates Student's Status on My Registration Department Head: Sees the enrolled subjects of the students under their department. Student: Checks the enrolled subjects on the My Registration page.		
Preconditions:	Students must be registered to the university system and must have an official university account to access the My Registration page.		
Postconditions:	Students will be able to see their reserved courses. Students will be able to see their enrolled subjects. Students can see the pre-requisites that they have taken.		
Flow of Events:			
	Actor	System	
	After undergoing the adding and dropping process, students can check if they've successfully added or dropped a certain subject from their list.	1.1 Once the student clicks the My Registration on the navigation bar, the system immediately leads them to a page consisting of a table that has their necessary information and their status for the semester. 1.2 The system immediately reflects the subjects that have been reserved by the students on the My Registration page. (Add and Drop Subjects)	
	2. After the student successfully enrolls, the student can easily check their status and the subjects that they have enrolled in.	2.1 The system immediately reflects the student as "Enrolled" after the Finance Office confirms the payment transaction made by the student. 2.2 Navigating through the My Registration page, students can easily check their enrolled course on the page.	
Exception Conditions:	Students who are not enrolled or registered into the university system cannot access the My Registration page.		

Use case name:	Submit Grades		
Scenario:	Once the professor gathers all the necessary grades for a certain period or semester, the professors have to calculate, encode and submit the student's grades in the system. After undergoing that process, the grades will be reflected in the students, My grades.		
Trigger event:	All grades are already recognized to be accurate and valid by the student.		
Brief Description:	The professor periodically evaluates the students based on their performance. The university has designed its grading system that will help the professors calculate.		
Actors:	Professor		
Related Use Cases:	Includes: Finance Updates Student's Status		
Stakeholders:	Student: Receives and views the final grades Professor: Posts the grades to the system. Registrar: Contains a copy of the Student's re		
Preconditions:	The student must be officially enrolled in the course and must have a record in the registrar to be evaluated. Grades submitted by the professor must be accurate and final. Grade appeals from students to professors must be resolved. The professor's record for a class must coincide with the official list of students enrolled in that class.		
Postconditions:	Each student will be able to view their grades (My Grades). The Registrar would also receive a copy of the student's My Registration page with grades on their system.		
Flow of Events:			
	Actor	System	
	The professor will be evaluating each of the students' performance through the grading system. After the professor has cleared and evaluated the student thoroughly, the professor will be submitting the student's grade privately through the university system (My Grades).	2.1 The system provides the Professors with the subjects that they have handled throughout the semester. Each subject is a link that will lead them to the list of students under that specific class. 2.2 Once the professor clicks the subject, the system will lead to a page that shows a table that consecutively consists of the Student's ID Number, Student's Name,	

		2.5 After clicking the Assign Button, the grade will appear on the My Grades page of the student's university account.
Exception Conditions:	Students who have not enrolled in specific courses will not be included in that particular subject's evaluation. The Department Head, who don't have a teaching subject, can only view the student's grades but cannot alter the grade itself. If the student lacks a requirement on a particular subject, professors will submit "INC" or incomplete.	

Use case name:	Checks My Grades		
Scenario:	After the student's professor evaluates their periodic performance, the student's grade/s will immediately be uploaded to the system. The students then will check their respective grades from the particular subject.		
Trigger event:	After the professor uploads the respective grades. When the student intends to check the uploaded grades.		
Brief Description:	After the professors upload the grades, students will have to check their grades under that particular subject.		
Actors:	Student		
Related Use Cases:	Includes: Submit Grades, Registering New S	tudents in the School System	
Stakeholders:	Professor: Encodes and uploads the grade of the student. Student: Checks and sees if the grade is proportional to their class performance.		
Preconditions:	The student must be enrolled in the course that they intend to have a grade in their account. If the student has not been attending the class, the professor will have to mark the student an "FD".		
Postconditions:	The student will be able to see the uploaded grade/s on the My Grades page in a table of grades from 1st,2nd,3rd and final quarter.		
Flow of Events:			
	Actor	System	
	The student checks their grade after being announced that their grade in a particular subject has been uploaded.	1.1 The system provides a My Grades button in the left navigation bar. When the student clicks the button, the system will lead them to a page consisting of their enrolled subjects, Prelim Grade, Midterm Grade, Pre-final Grade, and Final Grades.	
Exception Conditions:	Students who do not have an authenticated My Grades.	d and valid university account cannot access	

System UI

