

UP CRS vs UP SAIS
As of December 3, 2019

PLANNING

I. Background of the Study

The University of the Philippines (UP) is a state university system that was established in 1908. It is currently composed of 17 universities across the archipelago of which attracts top students in the country. UP offers a wide variety of undergraduate and postgraduate programs such as medicine, engineering, law, agriculture, social sciences, and business administration among others. Their respective courses are then taught by top professors in the country and demand for classes is usually high. The University of the Philippines - Diliman serves as its flagship campus.

Before the Computerized Registration System (CRS), students from the university used to fall in line to enlist in their classes every semester. Since UP Diliman caters to a lot of students, the lines were extremely long thus leaving its students dissatisfied. This eventually led to UP being called the “University of Pila”, and gave CRS and its development team an opportunity to offer a more effective and efficient method of registration.

The CRS was developed by the Computer Science department of the College of Engineering, in collaboration with the Office of the University Registrar. The homegrown system was created to tailor fit the modules needed by students, professors, staff, and management and aimed to serve as UP Diliman’s current centralized repository for all information related to registration. Additionally, real-time information can be obtained from the CRS network as it is periodically updated by its users at the start of each semester. The UP Pampanga campus uses the CRS system as well, although it was found that each campus has their own working version of the system as it was designed to cater continuous development based on the needs of its constituents.

On the other hand, the other UP campuses such as UP Los Baños, UP Manila, UP Baguio, and UP Cebu use the Student Academic Information System or SAIS, which serves as their Student Lifecycle Data Management System. This information system was developed by an external project contractor outside of UP and was intended to replace systems like CRS as it covers a wider scope. It was developed to further “integrate and harmonize the Information and Communication Technology (ICT) infrastructure and system across all constituent universities (CUs) of the UP System”

(Serafica, R., 2016). Further details on the history, campuses, year developed, and modules of both CRS and SAIS can be found in the table below.

UP CRS (Computerized Registration System)		UP SAIS (Student Academic Information System)
The Computerized Registration System (CRS) was developed during the term of Chancellor Emerlinda R. Roman by the Computer Science department of the College of Engineering, in collaboration with the Office of the University Registrar. This made pre-enlistment easier for the first semester of the academic year 2000-2001. (“History,” n.d.)	History	SAIS is part of the P752-million flagship program eUP of UP President Alfredo Pascual and was made by an external project contractor outside of UP and was intended to replace systems like CRS. It specifically uses Oracle technology which is made in the US. SAIS, a Student Lifecycle data management system, covers a wider scope than CRS. Besides student-related matters, SAIS also has an integration with the employee records in HRIS and the general ledger in FMIS (Serafica, R, 2016).
UP Diliman, UP Pampanga (“Student Academic Information System/Computer Registration System,” n.d.)	Campuses	UP Los Baños, UP Manila, UP Open University, UP Baguio, and UP Cebu (“Student Academic Information System/Computer Registration System,” n.d.)

Developed CRS/SRS in 1999	Year Developed	Uncertain
The current working version of CRS (Maroon 2nd Version) was developed in 2008		
Pre-Registration, which consists of the pre-enlistment and waitlisting of subjects as well as the student profile where the information of students are updated every semester; Application for a Leave of Absence (LOA); Dropping of subjects; Financial Assistance, where students can apply for a tuition loan; Student Records, which include grades viewing, payment history, and university clearance; and the Student Evaluation of Teaching (SET) (UP CRS Website, n.d.).	Modules	<p>The modules of SAIS include Admissions, Registration, Advisement, Curriculum, Student Records, Graduation, Student Financials, Financial Aid, Gradebook, and Contributor Relations (UP SAIS and Communications Team, 2015).</p> <p>For students, the Self Service section of SAIS consists of the Student Service to manage school-related activities; Class Search/Browse Catalog; Enrollment; Campus Finances to pay, view, and accept financial aid; Campus Personal Information to maintain personal information; Academic Records to view grades; Degree Progress/Graduation to see progress and apply for graduation; and Approval Workflow for form requests. Other sections of SAIS include Worklist and Reporting Tools to view the query-based report (UP CRS Website, n.d.).</p>

II. Problem Definition

One advantage that the UP university system has over other universities is that its students have the freedom to choose from a wide range of classes and special electives. The price of this, however, enlisting in the classes they require and desire per semester and coming up with a good schedule. This problem has been progressively mitigated in UP Diliman by the conscious efforts of the CRS development team as they continually receive feedback to implement further improvements in their existing modules. Despite this, according to UP President Alfredo Pascual, SAIS was planned to replace UP Diliman's CRS as a part of the 3-year digital standardization project of the UP System (UPS) in 2013.

This begs the question of whether adopting the SAIS system would improve the registration process or decrease the current efficiency instead. This is because student users of SAIS, like those from UP Manila and UP Cebu, have complained of SAIS' crashing tendency and inefficient interface during the registration period (Valdez, 2014). Moreover, the study aims to address the main pain point that students have during the registration period which is - why do the Iskolars ng Bayan, who is already fighting for his education and country, still need to fight for their classes during registration. This is where our comparison of UP CRS and UP SAIS comes in.

With this study, the researchers aim to compare and contrast UP SAIS and UP CRS with an emphasis on the student users' perspective in order to be able to make recommendations on both information systems. The comparison will serve as a basis for future UP Information Systems or even updating the current ones. The study will also help with the planning and building of the system to be appropriately aligned with what the university and its people need and would help avoid problems with the acceptance of such new systems. With this, the scope of our study will center on the student perspective, and a key limitation is that the campuses were chosen based on the availability of information.

III. Scope and Limitations

The study aimed to compare the registration processes of UP CRS and UP SAIS from the perspective of the students, specifically, the CRS system of UP Diliman and the SAIS system of UP Cebu and UP Manila. Though the researchers were able to collect some official documentation and conduct a formal interview for CRS with an officer of the Academic Information System Section (AISS) of the UP Diliman Office of the University Registrar (OUR), they were not able to do the same for SAIS as they mostly relied on online sources, interviews with SAIS users, and mere

assumptions. The developers of SAIS in the UP Information Technology Development Center (ITDC) informed the researchers that they had no authority over submitting SAIS documentation and subsequently an interview, but instead the UP Office of the Vice-President for Academic Affairs (OVPA), who recommended the researchers to go to the UP Office of the Vice-Chancellor for Academic Affairs (OVCAA), who recommended the researchers to go to the UP OUR, who recommended to go to the UP ITDC or the Office of the Vice-President for Development (OVPD). Due to time constraints, the researchers were not able to go to the UP OVPD. The authority over SAIS was not clear despite being transferred to multiple offices every few days or weeks which hindered the researchers from conducting an interview and collecting documentation from them. However, an informal interview with an employee from the UP Cebu Office of the University Registrar was conducted regarding SAIS though they could not divulge much information. Moreover, the researchers were not given access to the Written Work Procedure of both CRS and SAIS (which describes how a particular job or task is performed and includes data and information used and created in the process), so they were unable to use this to understand how the current system works and what improvements could be made.

ANALYSIS

I. Methods of Determining Requirements

The methods below were deemed to be the most effective and feasible to use by the researchers with respect to the nature of their study as well as the limitations bounding the information to be gathered.

1. Interviews
 - a. Individual and Group Interviews
 - b. Set up appointment/s and priming questions
 - c. Prepared a checklist (interview outline) which contained information such as the name of individual/s to be interviewed, interview location or medium, interview objectives (agenda), and the types of questions to be asked (open-ended questions and/or close-ended questions)
 - d. Took notes or minutes during the interviews to be reviewed later on
2. Direct Observation
 - a. Watched users interact with the systems
 - b. Obtained more firsthand and objective measures of student interactions with the information systems

3. Document Analysis

For a more historical and formal view of system requirements, the researchers opted to analyze documents relating to the system as well. This helped uncover information such as problems within the existing system, opportunities to meet new needs, organizational direction, names of key individuals, values of the organization, special information processing circumstances, reasons for current system design, and rules for processing data.

This, together with the method of Direct Observation, gave the researchers an idea as to how the formal systems differed from the informal systems and helped them gain a measure of the degree of difference between the two.

4. System Prototypes

The researchers evaluated both the CRS and SAIS systems (both of which were considered as system prototypes despite their completion and functionality) which enabled them to refine their understanding of the system requirements in concrete terms.

II. Deliverables and Outcomes

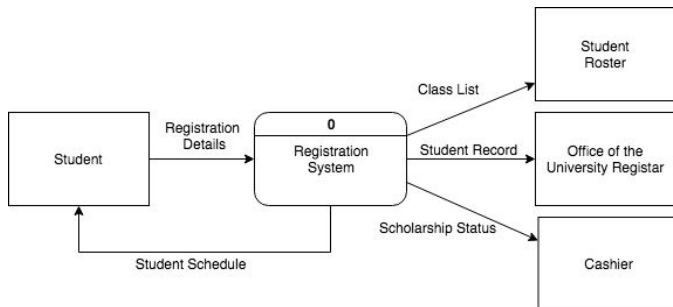
With the methods detailed above, the researchers aimed to produce deliverables that would be vital to their study as well as to help expedite the completion of outcomes that would benefit the information systems in discussion.

1. From Interviews and Observations
 - a. Interview transcripts, observation notes, meeting minutes
 - b. Obtained more detailed information on students' experiences with UP CRS and UP SAIS
2. From Existing Written Documents
 - a. Mission and strategy statements, procedure manuals, job descriptions, system documentation, flowcharts
 - b. Gained an understanding of the systems' purpose, rationale, and working components
3. From Computerized Sources
 - a. Displays and reports from system prototypes
 - b. Gained a better overview of the information systems with regards to how they function as well as their intended designs (both of which were geared towards the welfare of the UP student body)

III. Structuring System Process and Data Requirements

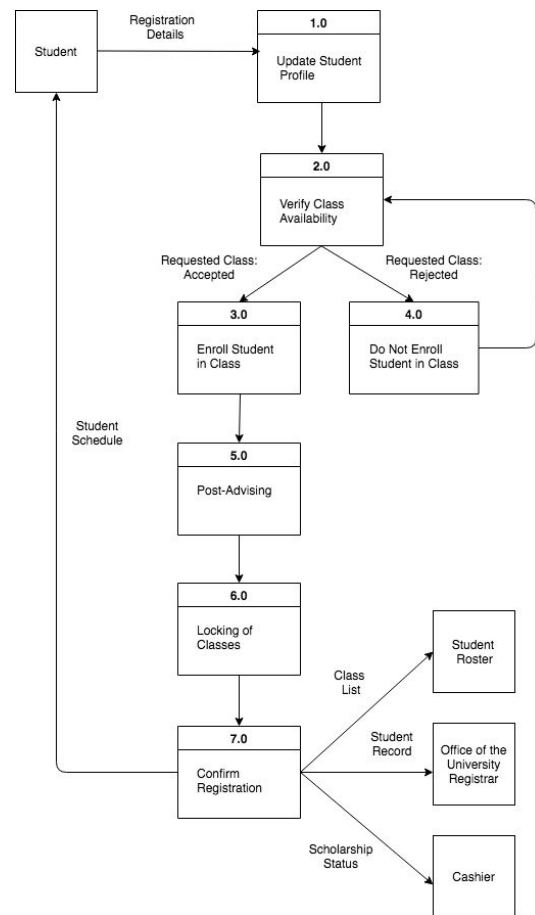
1. Context Diagram

The context diagram below provides a general overview of UP CRS and UP SAIS registration and pre-enlistment process. From the student perspective, there are many similarities as it starts with them filling out their student profile or personal data summary details and then picking their classes and schedules for the semester. When they register, a class list is sent to the professor's student roster, their student record is sent to the OUR to finalize the registration process, and their financial eligibility is reviewed by the cashier.



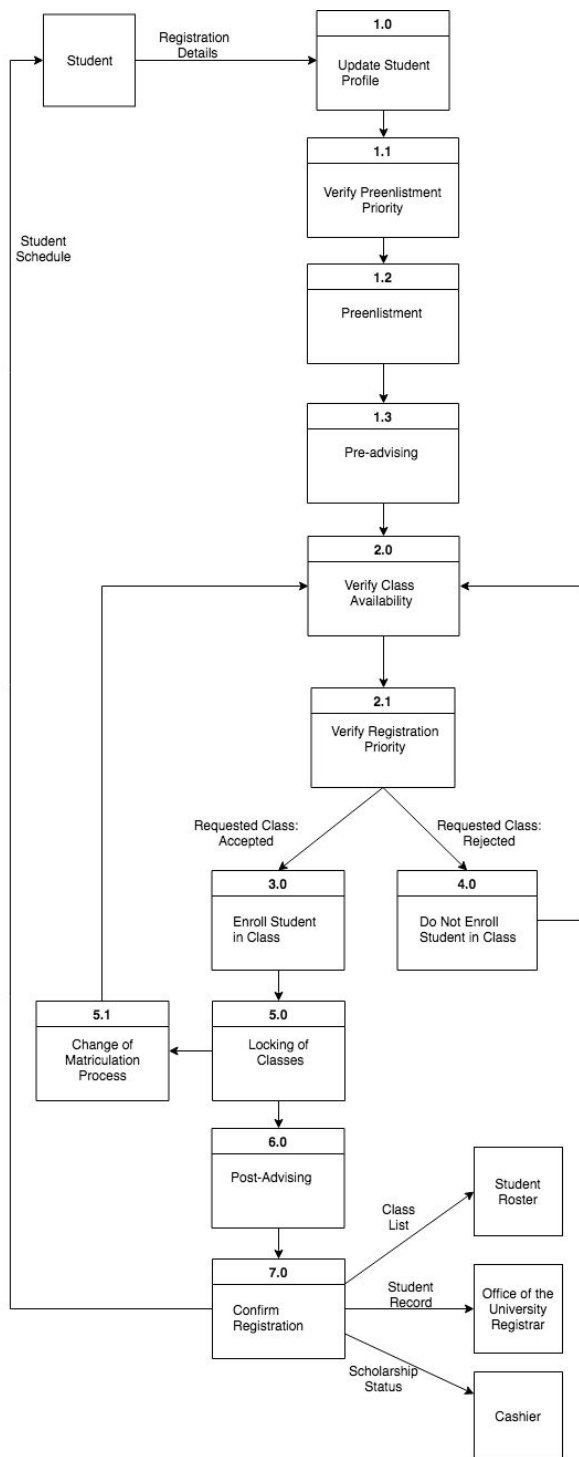
2. Level-0: UP Registration Process

The level-0 diagram represents the major processes involved in the registration and pre-enlistment on the UP CRS and UP SAIS systems. The diagram expands from the context diagram at a higher detail of the processes. The student updates their student profile, to begin with, next is for the systems to verify the availability of the class the student has chosen. The requested class will either be accepted or rejected, where the system once again will verify another class that the student has chosen. The next step for an accepted class is to enroll the student in the class, which led to post-advising and locking of the approved classes to confirm the registration of the student. The information from the registration would then be sent back to the student as a schedule, to the student roster to generate the class list, to the OUR for the student's record, and finally to cashier for evaluation of the scholarship status.



3. Level-1: UP Registration Process

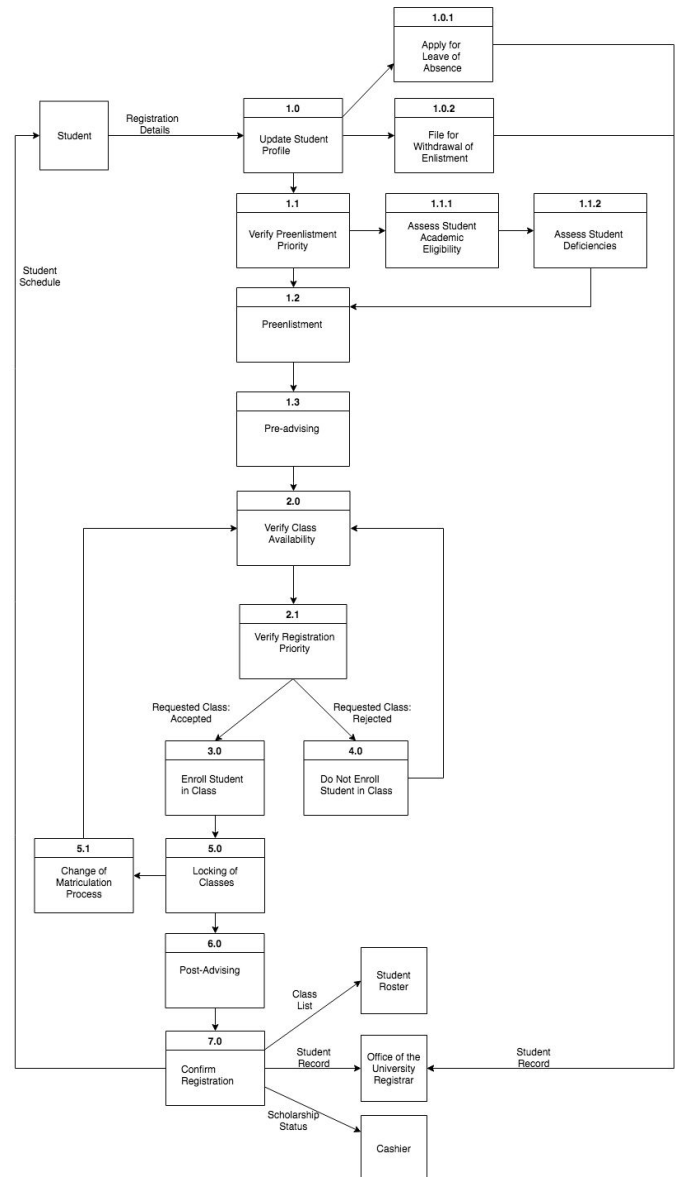
The level-1 diagram is the result of further decomposition of the Level-0 diagram. Aside from the major processes detailed previously, this diagram further expounded on the subprocesses under 1.0, 2.0, and 5.0. Further decomposition of 1.0 details that students must also undergo the verifying their pre-enlistment priority (e.g. freshman, regular, graduating), pre-enlistment of desired classes, and pre-advising before their chosen classes are verified for availability and they are granted classes. Further verification of registration priority (e.g. freshman, regular, graduating) was detailed as a subprocess under 'Verify Class Availability' for 2.0, while a change in matriculation was detailed as a further process under the 'Locking of Classes' for 5.0.



4. Level-2: UP Registration Process

The level-2 diagram is the decomposed level-0 to a more primitive data flow diagramming (DFD). The level-2 diagram still follows the rules of DFD, where the inputs and outputs of the processes differ, and the objects of the DFD each named distinctly. The level-2 expands more than the level-1 details, such as the process for applying for a leave of absence at 1.0.1, file for withdrawal at 1.0.2, assessing

academic eligibility at 1.1.1, and finally, the assessment of student deficiencies at 1.1.2. These expansions illustrate the further subprocedures that encompass the procedures from the higher levels.



5. E-R diagram based on the students' registration process using UP CRS and UP SAIS

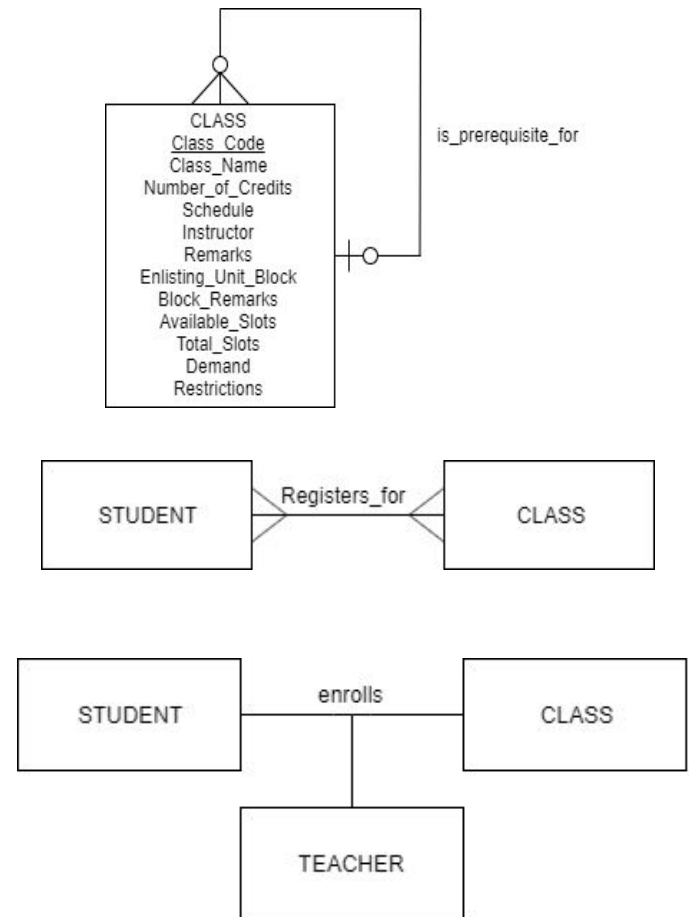
The entity-relationship (ER) data model is the detailed and logical representation of the UP CRS and UP SAIS registration processes. The ER data model consists of the entities, associations, and data elements of the systems used by several UP units. The entities for this ER model are concepts, such as student, student profile, class, pre-enlisted subject, and more entities shown in the diagram below. Relationships represented by the lines connecting the boxes showing an association between the entities, one is how the student updates the student profile and the student profile is updated by the student. Below is the ER diagram that is the

graphical representation of the assumed model of the registration from the student perspective.



6. Unary, Binary, and Ternary E-R Relationship

The Unary diagram describes the relationship that classes can serve as a prerequisite for a related higher level class. For example, Math 17 serves as the prerequisite class that must be taken before students can be enrolled for Math 100 under the curriculum prior to the K-12 revisions. The Binary diagram describes that multiple students enlist and enroll for multiple classes. This follows the UP System as students are permitted to take 15 to 18 units per semester wherein a typical class has a load of 3 units. The Ternary diagram describes a simultaneous relationship between students, classes, and teachers. In this relationship, multiple students enroll in a specific class, the class and the students are then assigned teachers of their respective fields to facilitate it.



IV. Initial Interview Results

To get a better understanding of how the CRS and SAIS registration processes differed, the researchers conducted interviews with students who have tried using both systems like transferees and cross-registrants. They shared their experiences, discussed what they liked and didn't like, and chose the system they ultimately preferred. One of their most common complaints for SAIS was that it would always crash, glitch, and encounter other problems especially during the enrollment period. They found the system confusing and not intuitive for them to use, one even mentioned relying on Facebook pages or groups to give instructions on simple tasks like enlisting in a subject. A transfer student from UP Los Banos to UP Diliman discussed that SAIS had a poor web design and missed functions like seeing the number of people enlisting in a specific course and an advanced search button. The same person found it inconvenient to always choose from what UP campus she was from and making sure that the course she wanted to get was offered in the current semester as other semester courses were reflected in the options. On the other hand, the respondents praised CRS as it was seamless and user-friendly, one calling it like an "academic Facebook." She praised the fact that CRS was made by UP as they too were the end users

and knew what was best for the students, unlike in SAIS which was made by outsiders. All the respondents overwhelmingly preferred CRS.

The first letters requesting interviews and documentation for the researchers' project were physically submitted on October 15, 2019 to the UP Diliman Office of the University Registrar (OUR) for CRS and the UP Information Technology Development Center (ITDC) for SAIS. The following day, UP ITDC emailed the group informing them they had no authority over the submission of documents and consequently an interview, but instead, it was the Office of the Vice-President for Academic Affairs (OVPA) . So, the group made another letter that the professor signed and endorsed and proceeded to submit the letter to the OVPA on October 17, 2019. However, upon submitting, they told the group that it was the UP Office of the Vice-Chancellor that was in charge of SAIS, not them. And so, on October 29, 2019, another letter was addressed and submitted to the UP Office of the Vice-Chancellor for Academic Affairs (OVCAA) . But like the last office, they said they were not in charge of SAIS, so they forwarded the researchers' letter to the OUR as they thought it was the right office for SAIS. But upon following up on the letter, on November 7, 2019, the OUR recommended the group to go to UP ITDC (where the group went to the first time) or the UP Office of the Vice-President for Development. Due to time constraints, the researchers were not able to go to the latter two offices. It was surprising for the researchers that no one really knew who had authority over SAIS, so the group was not able to conduct any formal interview for that system and instead relied on information from the internet, students who have used it, and the SAIS account the group had access to. However, one member went to Cebu for vacation during a weekend and on November 11, 2019, spoke to Sir Godfrey, an employee of the UP Cebu OUR, and asked some questions regarding SAIS. He confirmed that the SAIS system does not use student numbers unlike in CRS, but instead, uses their unique user IDs (e.g. GETORRES). The interviewee could not share much information without a formal letter and even said that the researchers' queries would be best answered by the developers in UP Diliman. Moreover, in UP Cebu, two people who experienced CRS and SAIS were interviewed and filmed for their group's video presentation.

For SAIS, every time the researchers were recommended to go to another office, they had to make a letter, have it signed by the professor, and then physically go to the office to submit it. Each time was a tedious process, just to be rejected in the end. After the experience, the group learned to email or call the office to verify the recommendations others gave them or confirm that the office has jurisdiction to entertain their queries before submitting a letter.

On November 7, 2019, Thursday, from 1:00 - 2:36 p.m., the group conducted an interview with Sir Jacob S. Obinguar of the Academic Information System Section (AISS) of the UP Diliman Office of the University Registrar (OUR) regarding the UP Diliman's Computerized Registration System (CRS). The group had an insight into the actual modules of the CRS including those not intended for students. He discussed the continuous development of the CRS and how it worked on the part of the development team and discussed some differences in CRS and SAIS and how the way each system was designed.

For CRS, prior to the interview, a lot of daily follow up calls to the OUR were made. Sometimes, no one was able to pick up the phone from AISS, and there was usually a long wait time. Also, in a number of instances, the group was told to call back the next day just to be told the same thing later on. On October 31, an employee from AISS answered the member's call and said that he would be free for an hour interview the following week and would email official documentation for SAIS. There was some miscommunication, since he sent the documents to the wrong email due to a typo, which the group only found out during the interview. And so, more follow up calls were made. A lot of time was spent on those calls, so much so that one of the member's phone line was cut due to excessive landline calls that cost a lot. Finally, on November 7, 2019, the researchers got to have a very insightful interview with Sir Jacob S. Obinguar. This experience taught the group to be persistent in research despite the daily setbacks.

DESIGN

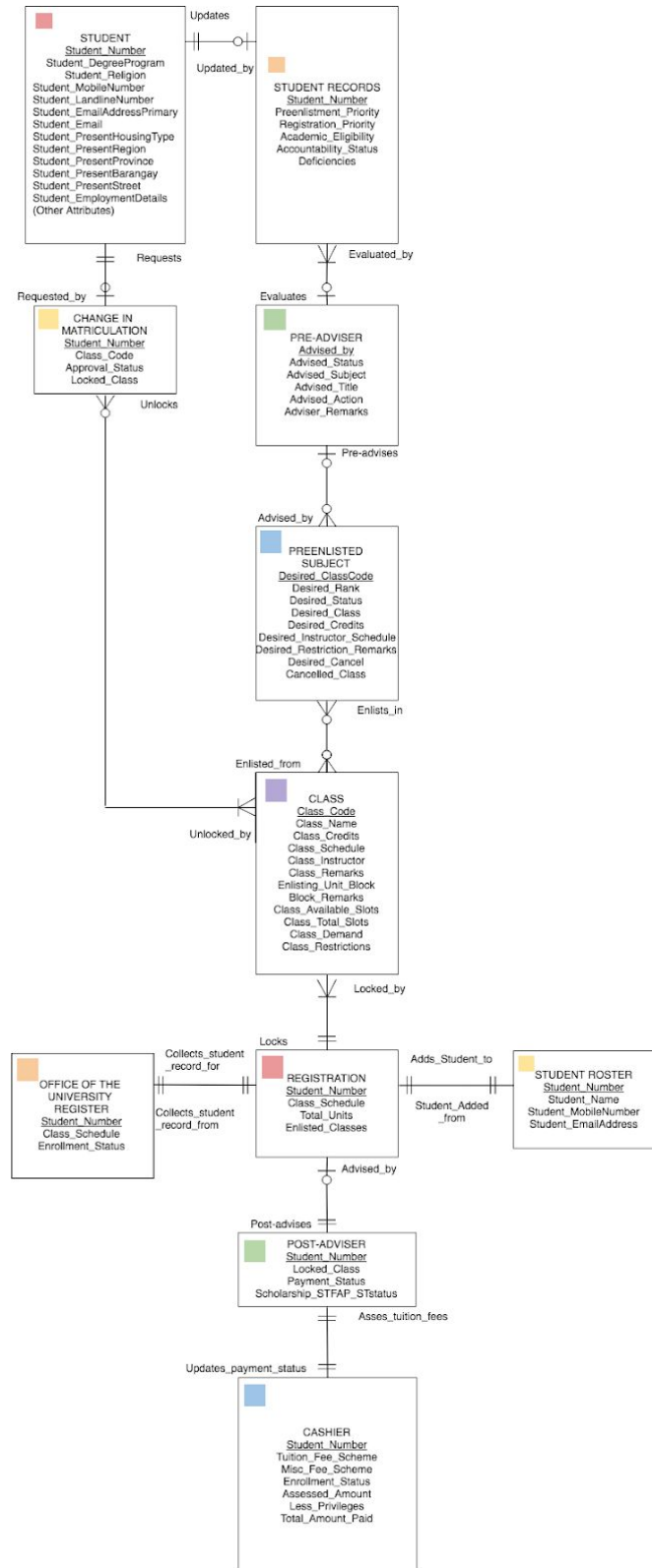
I. Differentiating Factors of UP CRS and UP SAIS: Logical and Physical Design

So far, the UP CRS and UP SAIS both have been analyzed to having a similar intended flow of the registration process for its students. The differentiation of UP CRS and UP SAIS begins in their logical and physical designs. The distinct differences between the two systems are seen on how they are designed, the logical design of these two systems emphasizes what kinds of information are priorities by the system, such as, for the central UP SAIS system involves selection of the campus in which the student registers in, as opposed to the UP CRS which is only accessible and used in the Diliman campus.

1. Conceptual Data for UP CRS Registration System

In addition to the conceptual ER diagrams of the UP registration system, attributes that associates with the entities in the UP CRS diagram have been listed to further

characterize what are the interests of the organization. This is where the differences of the UP CRS and UP SAIS begins, the first distinct differences of the two systems are how each system name their entities and their associated attributes, these show what kinds of information are priorities by the system.



STUDENT					
Student_Number	Student_DegreeProgram	Student_MobileNumber	Student_LandlineNumber	Student_EmailAddressPrimary	Other_Attributes
2017-12345	BS Business Administration	0998 123 4567	123 4567	upstudent1@gmail.com	-
2016-67890	BS Economics	0917 456 4234	423 3423	upstudent2@gmail.com	-

STUDENT RECORDS					
Student_Number	Preenlistment_Priority	Registration_Priority	Academic_Eligibility	Accountability_Status	Deficiencies
2017-12345	Regular	Regular	Eligible	Cleared	None
2016-67890	Regular	Regular	Eligible	Cleared	None

CHANGE IN MATRICULATION			
Student_Number	Class_Code	Approval_Status	Locked_Status
2017-12345	1711	Approved	Locked
2016-67890	6663	Approved	Locked

PRE-ADVISER					
Advised_By	Advised_Status	Advised_Subject	Advised_Title	Advised_Action	Other_Attributes
Advisor1	Approved	BA 186	-	-	-
Advisor2	Approved	ECON 100.2	-	-	-

PRE-ENLISTED SUBJECT					
Desired_ClassCode	Desired_Rank	Desired_Status	Desired_Class	Desired_Credits	Other_Attributes
1711	1	Enlisted	BA 186 THR	3.0	-
6663	3	Enlisted	Econ 100.2 WFE	3.0	-

CLASS					
Class_Code	Class_Credits	Class_Schedule	Class_Instructor	Class_Remarks	Other_Attributes
1711	3.0	TTH 8:30 - 10:00	Roy Canseco	For Junior BA Students ONLY	-
6663	3.0	WF 11:00 - 12:00	Agustin Arcenas	For Econ Students ONLY	-

REGISTRATION			
Student_Number	Class_Schedule	Total_Units	Enlisted_Classes
2017-12345	TTH - BA 186, BA 141, BA 115 WF - BA 101, BA 182, BA 151	18.0	BA 101, BA 115, BA 141, BA 151, BA 182, BA 186
2016-67890	TTH - ECON 100.2, ECON 172, WF - ECON 106, GEOG 1, KAS 2	15.0	ECON 100.2, ECON 172, ECON 106, GEOG1, KAS 2

OFFICE OF THE UNIVERSITY REGISTRAR		
Student_Number	Class_Schedule	Enrollment_Status
2017-12345	TTH - BA 186, BA 141, BA 115 WF - BA 101, BA 182, BA 151	Paid
2016-67890	TTH - ECON 100.2, ECON 172, WF - ECON 106, GEOG 1, KAS 2	Paid

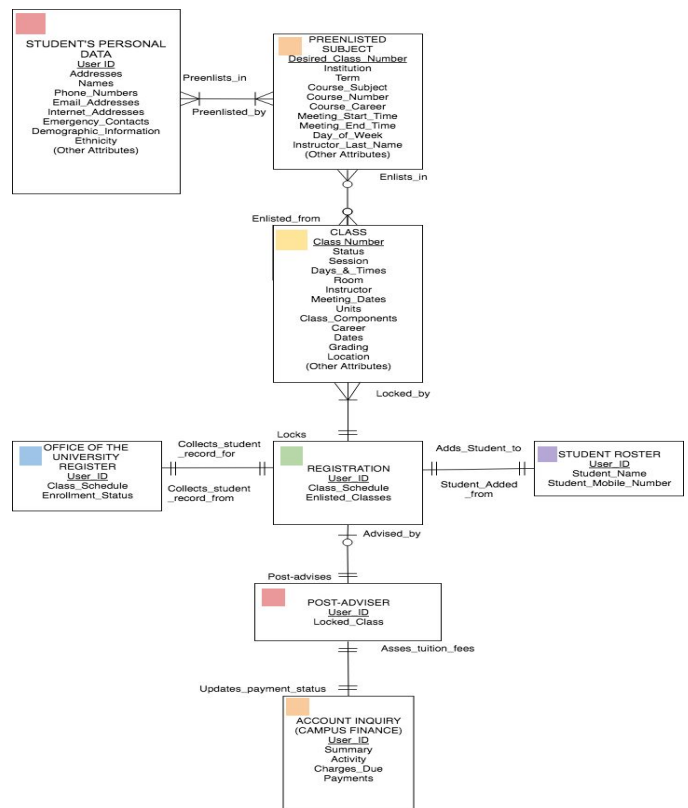
STUDENT ROSTER			
Student_Number	Student_Name	Student_MobileNumber	Student_EmailAddress
2017-12345	UP Student 1	0998 123 4567	upstudent1@gmail.com
2016-67890	UP Student 2	0917 456 4234	upstudent2@gmail.com

POST-ADVISER			
Student_Number	Locked_Class	Payment_Status	Scholarship_STFAP_STstatus
2017-12345	BA 186, BA 141, BA 115, BA 101, BA 182, BA 151	Registered	Universal Access to Quality Tertiary Education Act (Confirmed)
2016-67890	ECON 100.2, ECON 172, ECON 106, GEOG 1, KAS 2	Registered	Universal Access to Quality Tertiary Education Act (Confirmed)

CASHIER					
Student_Number	Tuition_Fee_Scheme	Misc_Fee_Scheme	Enrollment_Status	Assessed_Amount	Other_Attributes
2017-12345	UG: SNo 2007 and above	Undergraduate (Admitted starting 1st Sem AY 2007-2008)	Paid	30,000.00	-
2016-67890	UG: SNo 2007 and above	Undergraduate (Admitted starting 1st Sem AY 2007-2008)	Paid	27,000.00	-

2. Conceptual Data for UP SAIS Registration System

In addition to the conceptual ER diagrams of the UP registration system, attributes that associates with the entities in the UP SAIS diagram have been listed to further characterize what are the interests of the organization.



STUDENT'S PERSONAL DATA					
USER_ID	Addresses	Names	Phone_Numbers	Email_Addresses	Other_Attributes
UPCSTUDENT1	Osmena St., Banilad, Cebu City	UPC STUDENT 1	123 4567	upstudent1@gmail.com	-
UPCSTUDENT2	Roxas St., Guadalupe, Mandaue	UP STUDENT 2	423 3423	upstudent2@gmail.com	-

PREENLISTED SUBJECT					
Desired_Class_Number	Institution	Term	Course_Subject	Course_Number	Other_Attributes
12912	UP Cebu	Semester 1 2019-2020	Math	10	-
34523	UP Cebu	Semester 1 2019-2020	Ethics	1	-

CLASS					
Class_Number	Status	Session	Days_&Times	Room	Other_Attributes
12984	Open	Regular Academic Session	MoTh 3:00PM - 4:30PM	AS 165 (Classroom)	-
12880	Open	Regular Academic Session	MoTh 10:30AM - 12:00PM	UG 119 (Classroom)	-

REGISTRATION		
USER_ID	Class_Schedule	Enlisted_Classes
UPCSTUDENT1	TTH - BA 186, BA 141, BA 115 WF - BA 101, BA 182, BA 151	BA 101, BA 115, BA 141, BA 151, BA 182, BA 186
UPCSTUDENT2	TTH - ECON 100.2, KAS 1, WF - SCIENCE 11, ETHICS 1	ECON 100.2, ECON 172, KAS 1, SCIENCE 11, ETHICS 1

OFFICE OF THE UNIVERSITY REGISTRAR

USER_ID	Class_Schedule	Enrollment_Status
UPCSTUDENT1	TTH - BA 186, BA 141, BA 115 WF - BA 101, BA 182, BA 151	Paid
UPCSTUDENT2	TTH - ECON 100.2, KAS 1, WF - SCIENCE 11, ETHICS 1	Paid

STUDENT ROSTER

USER_ID	Student_Name	Student_Mobile_Num ber	Student_Email_Address
UPCSTUDENT1	UP Student 1	0998 123 4567	upstudent1@gmail.com
UPCSTUDENT2	UP Student 2	0917 456 4234	upstudent2@gmail.com

POST-ADVISER

User_ID	Locked_Class
UPCSTUDENT1	TTH - BA 186, BA 141, BA 115 WF - BA 101, BA 182, BA 151
UPCSTUDENT2	TTH - ECON 100.2, KAS 1, WF - SCIENCE 11, ETHICS 1

ACCOUNT INQUIRY (CAMPUS FINANCE)*

User_ID	Summary	Activity	Charges_Due	Payments	Other_Attribute s
UPCSTUDENT1	-	-	-	-	-
UPCSTUDENT2	-	-	-	-	-

*The SAIS account we had access to did not display the account details

II. Differentiating Factors of UP CRS and UP SAIS: Interface

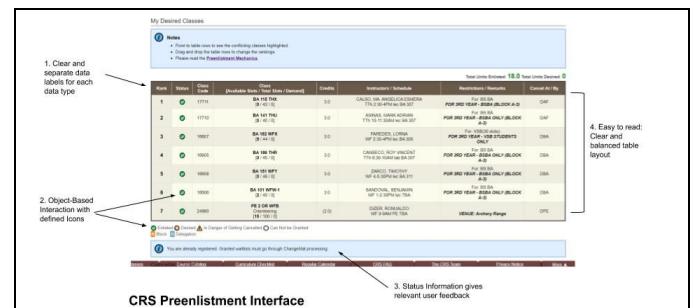
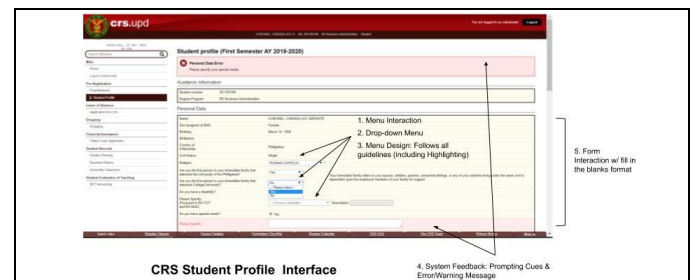
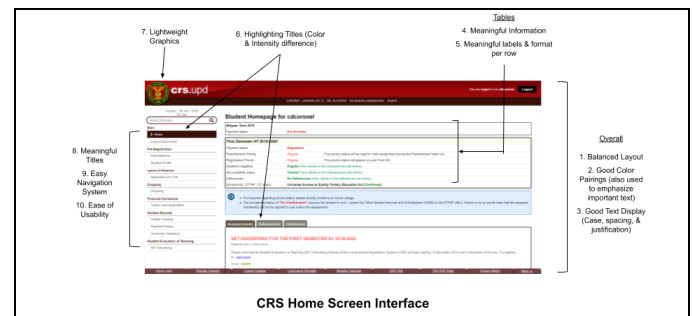
1. UP CRS Interface

When it comes to the user-friendliness of the interface, CRS is easier to navigate as it was made by UP whereas SAIS was outsourced. It has a balanced layout with an easy navigation system and meaningful titles in its different modules. Compared to SAIS, it ensures a smoother user experience making it more student-friendly.

In the first image shown below, the CRS Home Screen Interface has a balanced layout which makes it appear appealing to the user. The layout is simple, however, it complements the university color (idk how to rephrase this hahu). The basic student information is already visible to the user, as it appears directly on the top of the page once the student has logged in his credentials. On the side of the page, all the HTML buttons to access each feature are functioning well and directly moves to another page if the user selects whichever he wanted to access.

On the Student Profile page, the menus are interactive as the user can easily change their answers if needed. There are also system feedback, whenever there are missed answers or items that are left unanswered. Most of the interface is similar to the home page, so there is not much change with the layout.

In the beginning of each semester, everyone needs to pre-enlist their subjects using CRS. During the pre-enlistment period, a student will be able to rearrange their desired classes according to priority. As shown in the image below, the information relayed to the student is clear as there are separate data labels for the data shown. There are icons shown on the side of each subject which could show the status of the subject. For example, on the pre-enlistment period, an orange plus icon will be seen meaning the student is waitlisted for the subject. On the other hand, if a student is already enlisted, a green check icon will be seen to confirm the enlistment of the student in the subject.



2. UP SAIS Interface

The user interface of SAIS is completely different from CRS. As shown in the photos below, it has an unbalanced layout and a blunt color scheming. Most of the

drop-down menus shown are not leading to another page but to even more menus. It also has navigation menus on both sides, which makes it confusing for the user to find what they actually need.

Thus, the SAIS interface, in its entirety, is not as intuitive as it can be as a student-registration-friendly system. Students using SAIS frequently experience crashes, with unknown causes, especially during the registration period. It has been an issue for years and they were not able to come up with a solution for it. Another issue of the interface is how some menus are named, which may cause some issues, especially for not as experienced users of the system.

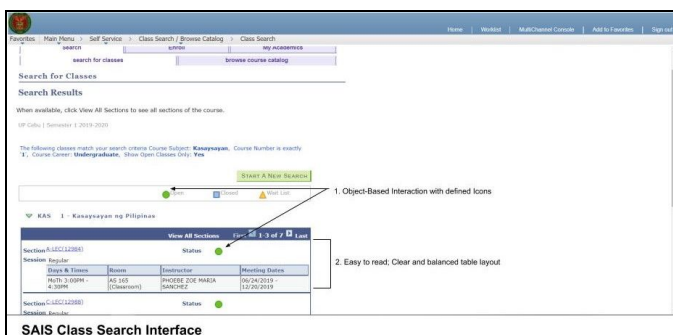
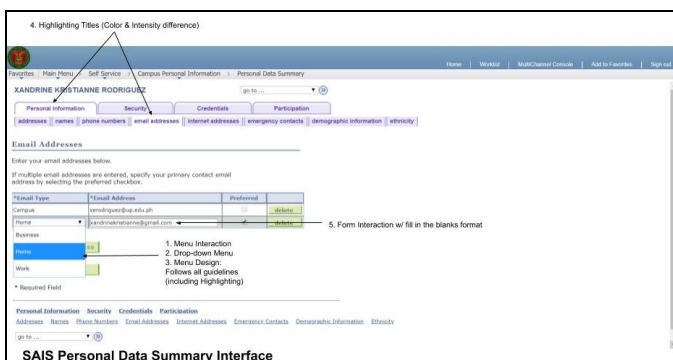
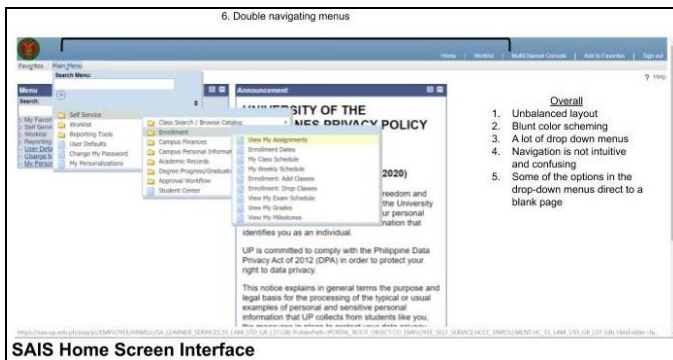
The downside of using a prepackaged system is that it is also more difficult and more costly to make changes in the SAIS system's interface where most features are not as customizable, as opposed to its counterpart, CRS.

III. Conclusions and Recommendations

Given all of the information presented above, the researchers therefore conclude that the CRS system is much more viable than the SAIS system. As a homegrown platform, CRS exhibits flexibility and customizability, making it more effective than its off-the-shelf SAIS counterpart. In fact, according to Jacob Obinguar (the Academic Information System Section (AISS) Supervisor), CRS may actually be completed by 2020. The module for curriculum checking would close the chapter on CRS UPD, which would lead to a complete manual being available for the system. CRS, however, is limited to facilitating the registration process in contrast to SAIS which is a centralized system for all information. CRS may then consider expanding to handle information beyond the registration process. The system may also advance to mobile application as this would be the epitome of customer sensitivity, at least for the UP staff and students.

Meanwhile, the SAIS system still has a long way to go. As an outsourced, uncustomizable platform, SAIS simply offers general functions used by almost every other university. It is not customized to the needs of the UP campuses, especially to that of UP Diliman. Although both CRS and SAIS have the same intended flow for registration and pre-enlistment, the SAIS interface contains too many modules that hinder its optimal function. The system therefore needs to be improved based on what the UP staff and students actually need so as to facilitate a smoother flow for registration.

With that, the researchers recommend that UP Diliman maintain its usage of the CRS system in lieu of shifting to the SAIS system as the latter is still in need of dire improvement in terms of user-friendliness.



APPENDICES

I. Letters requesting documents and interviews addressed to Ma. Theresa T. Payongayong of the Office of the University Registrar for UP CRS and Paul Noel Pajo of UP Information Technology Development Center for UP SAIS

Ma. Theresa T. Payongayong
Office of the University Registrar
October 15, 2019

Good day Prof. Payongayong!

We are 3rd year students from the College of Business Administration in UP Diliman and are currently conducting a study on UP CRS and UP SAIS for our BA 186 (Systems Analysis and Design) class under Prof. Roy Canseco. With this study, we aim to compare and contrast the systems with emphasis on student users and make recommendations.

Through the CRS division of the Office of the University Registrar, we would like to formally request for a **copy of the updated manuals, documentation of feedback, and development studies of the CRS system** to be used as the basis of our study. In addition, we would also like to request to **conduct a series of meetings and interviews** with the team in charge of developing and maintaining CRS to gain a better understanding of its working components. These documents and discussions will be kept confidential and used solely for purposes regarding the study. With this letter, we have also included our group's initial research on UP CRS and UP SAIS along with the outlined methodologies that we intend to follow in order to efficiently conduct the study.

We hope to have the initial meeting with the CRS team as well as the turn-over of the aforementioned documents **by the end of October to early November 2019** so that we may begin our analysis. We will also be coordinating with the UP Information Technology Development Center (ITDC) to gather information on UP SAIS.

We would be glad to meet or discuss with you and the CRS team if there are further questions about our intended UP CRS and UP SAIS study. You may contact our group's point person Gil Ellis Torres through email at lylethelye@gmail.com or phone at 09328659543. We would also be open and eager to share the progress and results of the study with the Office of the University Registrar as we pursue it.

Thank you for your time and consideration! We are hoping for your kind cooperation.

Sincerely,

Gil Ellis Torres
Kassandra Catherine Buhion
Carissa Joy Coronel
Robyn Mikaela Rey
Mariel Janella Tan

Endorsed by:

Prof. Roy Canseco
Faculty, Cesar E.A. Virata School
of Business

Director Paulo Noel G Paje
UP Information Technology Development Center
October 15, 2019

Good day Director Paje!

We are 3rd year students from the College of Business Administration in UP Diliman and are currently conducting a study on UP CRS and UP SAIS for our BA 186 (Systems Analysis and Design) class under Prof. Roy Canseco. With this study, we aim to compare and contrast the systems with emphasis on student users and make recommendations.

Through the SAIS division of the UP Information Technology Development Center, we would like to formally request for a **copy of the updated manuals, documentation of feedback, and development studies of the SAIS system** to be used as the basis of our study. In addition, we would also like to request to **conduct a series of meetings and interviews** with the team in charge of developing and maintaining SAIS to gain a better understanding of its working components. These documents and discussions will be kept confidential and used solely for purposes regarding the study. With this letter, we have also included our group's initial research on UP CRS and UP SAIS along with the outlined methodologies that we intend to follow in order to efficiently conduct the study.

We hope to have the initial meeting with the SAIS team as well as the turn-over of the aforementioned documents **by the end of October to early November 2019** so that we may begin our analysis. We will also be coordinating with the Office of the University Registrar to gather information on UP CRS.

We would be glad to meet or discuss with you and the CRS team if there are further questions about our intended UP CRS and UP SAIS study. You may contact our group's point person Gil Ellis Torres through email at lylethelye@gmail.com or phone at 09328659543. We would also be open and eager to share the progress and results of the study with the Office of the University Registrar as we pursue it.

Thank you for your time and consideration! We are hoping for your kind cooperation.



Sincerely,


Gil Ellis Torres
Kassandra Catherine Buhion
Carissa Joy Coronel
Robyn Mikaela Rey
Mariel Janella Tan




Endorsed by:

Prof. Roy Canseco
Faculty, Cesar E.A. Virata School
of Business

II. Email from UP ITDC informing us that they have no authority over submitting SAIS documentation; instead, it is the Office of the Vice President for Academic Affairs

Re: Request for SAIS Documentation, etc.    

 **UP Information Technology Development Center** <itdc_info@up.edu.ph>
to me 

Wed, Oct 16, 3:57 PM (5 days ago)   

Good day, Mr. Gil Torres,

Thank you for your letter requesting SAIS manuals, documentation, etc. We have forwarded the request to our director.

However, we regret to inform you that ITDC is not the owner of SAIS. It is owned by the Office of the Vice President for Academic Affairs. ITDC has no authority over submitting SAIS documentation.

Thank you for your understanding.

Regards,

Communications Team

Information Technology Development Center
Office of the Vice President for Development
University of the Philippines System

- III. Letter requesting documents and interviews for UP SAIS addressed to Maria Cynthia Rose B. Bautista of the UP Office of the Vice-President for Academic Affairs. However, upon submitting the letter on October 17, they informed us that it is the UP Office of the Vice-Chancellor that is in charge of SAIS, not them

Maria Cynthia Rose B. Bautista
UP Office of the Vice-President for Academic Affairs
October 17, 2019

Good day, Vice President Bautista!

We are 3rd year students from the College of Business Administration in UP Diliman and are currently conducting a study on UP CRS and UP SAIS for our BA 186 (Systems Analysis and Design) class under Prof. Roy Canseco. With this study, we aim to compare and contrast the systems with emphasis on student users and make recommendations.

Through the SAIS division of the UP Office of the Vice-President for Academic Affairs, we would like to formally request for a **copy of the updated manuals, documentation of feedback, and development studies of the SAIS system** to be used as the basis of our study. In addition, we would also like to request to **conduct a series of meetings and interviews** with the team in charge of developing and maintaining SAIS to gain a better understanding of its working components. These documents and discussions will be kept confidential and used solely for purposes regarding the study. With this letter, we have also included our group's initial research on UP CRS and UP SAIS along with the outlined methodologies that we intend to follow in order to efficiently conduct the study.

We hope to have the initial meeting with the SAIS team as well as the turn-over of the aforementioned documents **by the end of October to early November 2019** so that we may begin our analysis. We will also be coordinating with the Office of the University Registrar to gather information on UP CRS.

We would be glad to meet or discuss with you and the SAIS team if there are further questions about our intended UP CRS and UP SAIS study. You may contact our group's point person Gil Ellis Torres through email at **lylethelyle@gmail.com** or phone at **09328659543**. We would also be open and eager to share the progress and results of the study with the Office of the Vice-President for Academic Affairs as we pursue it.

Thank you for your time and consideration! We are hoping for your kind cooperation.

Sincerely,

Gil Ellis Torres
Kassandra Catherine Buhion
Carissa Joy Coronel
Robyn Mikaela Rey
Mariel Janella Tan

Endorsed by:

Prof. Roy Canseco
Faculty, Cesar E.A. Virata School
of Business

IV. Letter requesting documents and interviews for UP SAIS addressed to Evangeline C. Amor of the UP Office of the Vice-Chancellor for Academic Affairs

Evangeline C. Amor, Ph.D.
UP Office of the Vice-Chancellor for Academic Affairs
October 24, 2019

Good day, Vice Chancellor Amor!

We are 3rd year students from the College of Business Administration in UP Diliman and are currently conducting a study on UP CRS and UP SAIS for our BA 186 (Systems Analysis and Design) class under Prof. Roy Canseco. With this study, we aim to compare and contrast the systems with emphasis on student users and make recommendations.

Through the SAIS division of the UP Office of the Vice-Chancellor for Academic Affairs, we would like to formally request for a **copy of the updated manuals, documentation of feedback, and development studies of the SAIS system** to be used as the basis of our study. In addition, we would also like to request to **conduct a series of meetings and interviews** with the team in charge of developing and maintaining SAIS to gain a better understanding of its working components. These documents and discussions will be kept confidential and used solely for purposes regarding the study. With this letter, we have also included our group's initial research on UP CRS and UP SAIS along with the outlined methodologies that we intend to follow in order to efficiently conduct the study.

We hope to have the initial meeting with the SAIS team as well as the turn-over of the aforementioned documents **by the end of October to early November 2019** so that we may begin our analysis. We will also be coordinating with the Office of the University Registrar to gather information on UP CRS.

We would be glad to meet or discuss with you and the SAIS team if there are further questions about our intended UP CRS and UP SAIS study. You may contact our group's point person Gil Ellis Torres through email at lylethelyle@gmail.com or phone at **09328659543**. We would also be open and eager to share the progress and results of the study with the Office of the Vice-Chancellor for Academic Affairs as we pursue it.

Thank you for your time and consideration! We are hoping for your kind cooperation.

Sincerely,

Gil Ellis Torres
Kassandra Catherine Buhion
Carissa Joy Coronel
Robyn Mikaela Rey
Marel Janella Tan

Endorsed by:

Prof. Roy Canseco
Faculty, Cesar E.A. Virata School
of Business

V. Initial Interviews with students who have used both UP CRS and UP SAIS:

The researchers asked the respondents about their experiences with each system, what they liked and did not like, and which system they ultimately preferred.

1. **Therese Andria Malazarte** (a UP Cebu student who uses SAIS but was able to use CRS during her midyear in UP Diliman)

“SAIS can get a lot of glitches during enrollment especially when all campuses use it simultaneously thus resulting to delays. I didn't experience this when I used CRS. SAIS was not user-friendly for the first time I used it. I still needed to figure out how to run it. Instructions were needed (like those disseminated in UPC facebook pages/groups) even for simple tasks like enlisting a subject. For CRS, I got comfortable the first time I used it. I am a satisfied user of CRS. It is like navigating an academic Facebook.

I prefer CRS over SAIS. The former was manufactured in-house while the latter was made by some bunch of non-UP dudes. This was part of the eUP plans of the previous UP president - all UP campuses must follow one ICT workflow (one UP feels). I think it should have been better that SAIS was created homegrown. There is so much talent in UP who can weigh the pros and cons better than outside people because at the end of the day, these UP people become the end-users. They can relate more and of course, as an end-user, you should create something that's comfortable for you.”

2. **Adrey Marie Lim** (a UP Diliman student who uses CRS but was able to use SAIS before transferring from UP Los Banos)

“SAIS had a poor web design; it buffers a lot (downtime usually occurs especially if sabay sabay na nageenlist and nag aagawan ng slot); you can't see how many people are enlisting on a specific course; search button isn't that advanced which makes enlisting more complicated; since its a centralized system for the other UP campuses, it's such a hassle to always choose pa from which branch ka and also you have to make sure na you're choosing courses offered on the current sem and year (because yung previous sems narereflect pa rin sa options); and in general, it's quite hard to navigate through their site.

CRS is seamless and easy to use; options are well-organized; less hassle as compared to SAIS; and the actual opposite lang ng sinabi ko sa SAIS or it just offers better services. So based on my lengthy answer/complaints sa SAIS, SAIS is not my preferred system.”

3. **Ianne Clarisse Ortiz** (a UP Cebu alumna who used SAIS but was able to use CRS when she took up further studies in UP Diliman)

“CRS was more user friendly and easier to navigate especially when it came to enrolling in subjects. I liked CRS better, SAIS always had problems when I tried to use it. For example, I couldn't find my subjects and there was this one time too, where all the classes I enrolled in got cancelled at once because of a bug in a system. When I tried to enroll in the subjects again, they were full so I had to look for teachers and do other things to get a slot. I only use SAIS for enrollment really and every time, there was always something wrong with my account especially with subjects. CRS is smoother. In SAIS, there was this one time I had to change sections because they realized I didn't enroll in a section I was allowed to enroll in. I don't know if other people experienced this too.”

4. **Caitlyn Joie Yu** (a UP Manila student who uses SAIS but was able to use CRS during her midyear in UP Diliman)

“Experience with SAIS - TERRIBLE. it’s not like CRS that’s randomized and idk how to feel about that. It’s first come first serve here to get the class. Either way, SAIS is still terrible because it crashes a lot. Sometimes it glitches that some people can access the classes first before the others (tapos admin will reset it lol back to 0 mga nakakuha ng class). Possible rin na bigla you can’t log in your account then you’ll have to email the admin so you can access it again. Idk maybe it tends to happen din kung overload system nila? Basta ang inefficient and we end up spending 5-6 hours online, waiting for an opportunity to get the class we want in case it opens again bigla (because there was a drop button for a time)

SAIS Advantages: first come first serve so medyo fair kung nauna ka naman talaga in getting the class. And I actually still really appreciate the drop button HAHA idk if CRS has that. I don’t wanna go to Manila personally just to drop a class

SAIS Disadvantages: crashes as lot, many glitches

CRS Advantages: Randomized? So you don’t need to rush too much in getting the class kasi it’s all about luck either way

Which system do I prefer all in all? hard to say aaaaaa if CRS doesn’t crash a lot then maybe that? I don’t know enough about CRS to really have a say”


5. **Ian Ines** (a UP Manila alumni who used SAIS)

“UPM in general, mostly nagkakaproblem sila sa SAIS system mismo. The said enrollment dates mismo biglang nagloloko yung system and malala pa dun random siya nangyayari so may mga ibang students na nakakapgenroll kaagad kaya minsan may mga students na naagawan ng slots.

So pag ganun, inaantay na lang maayos yung site. Pero kapag may mga ganyang problem, nagtatake naman kaagad ng actions yung student council namin, like kinakausap na nila kaagad yung admin about the problems, to extend the enrollment period. Etc.”

VI. Email from Mr. Jacob S. Obinguar about the UPD CRS with an attached file of the history of CRS

11/7/2019 University of the Philippines Mail - Fwd: About CRS

 UNIVERSITY OF THE PHILIPPINES

Mariel Janella Tan <mttan4@up.edu.ph>

Fwd: About CRS
1 message

Gil Ellis Estenzo Torres <lylethelye@gmail.com> Thu, Nov 7, 2019 at 8:28 PM
To: mttan4@up.edu.ph

----- Forwarded message -----
From: **Gil Ellis Estenzo Torres** <lylethelye@gmail.com>
Date: Thu, Nov 7, 2019 at 1:14 PM
Subject: Fwd: About CRS
To: robynmikaela@gmail.com <robynmikaela@gmail.com>

----- Forwarded message -----
From: **Jacob Obinguar** <jsobinguar@up.edu.ph>
Date: Thu, 7 Nov 2019 at 1:09 PM
Subject: Fwd: About CRS
To: <lylethelye@gmail.com>

Yours very truly,

JACOB S. OBINGUAR
Academic Information System Section (AISS)
Office of the University Registrar
University of the Philippines, Diliman QC
VoIP : 981.85.00 local 4560

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----- Forwarded message -----
From: **Jacob Obinguar** <jsobinguar@up.edu.ph>
Date: Thu, Oct 31, 2019 at 11:50 AM
Subject: About CRS
To: <lylethele@gmail.com>

Dear Mr Torres et al,

In response to your request, please find attached file and link below for your reference.

The attached file below is the copy of the presentation OUR made in 2012 about the timeline of CRS. The link below will lead you to the document created around 2011. The file is very much outdated and some of the modules documented there were either already been updated or retired but that is the only document we can provide you right now about the modules in CRS.

<http://goo.gl/FpngQ>

UPD CRS does not have a Complete Manual (not yet) as development is still in progress. CRS is being built module by module through time. Adjusting to the needs of times and changes in policies (e.g. Free Tuition). CRS modules are

<https://mail.google.com/mail/u/1/?ik=73f46c56d3&view=pt&search=all&permthid=thread-f%3A1649546113904805735&simpl=msg-f%3A1649546113904805...> 1/2

11/7/2019 University of the Philippines Mail - Fwd: About CRS

easy to understand and have step by step instructions embedded into the modules making a Manual not so necessary. Nevertheless, when a module is launched, a demonstration is always conducted.

We also do not archive feedback, we keep them for a while (say a bug has been reported) and eventually discard them when there is no more need for that feedback to be kept (say the issue has been resolved). Flowcharts (LOA,DROPPING, COM, etc.) are also available in CRS should students/units need to know the flow of a certain transaction and we also have FAQs and a Support Team(call, email, walk-in) for CRS-related questions and assistance request.


Currently, CRS has more or less 168 modules and around 170 reports.

We can accommodate an interview next week for an hour or two between Tue-Fri.

Yours very truly,

JACOB S. OBINGUAR
Academic Information System Section (AISS)
Office of the University Registrar
University of the Philippines, Diliman QC
VoIP : 981.85.00 local 4560

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 **CRS timeline (2012).pdf**
2667K

VII. Documentation of the Interview with Sir Jacob from the AISS

November 7, 2019, Thursday, 1:00 - 2:36 pm

The researchers had an interview with Sir Jacob S. Obinguar of the Academic Information System Section (AISS) of the Office of the University Registrar (OUR) regarding the UP Diliman's Computerized Registration System (CRS). We had an insight into the actual modules of the CRS and how little part of the system we actually as students. He discussed the continuous development of the CRS and how it works on the part of the development team. He has also discussed some differences in CRS and SAIS, on how the way each system was designed.



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