Presented at the 5th International Conference for Engineering Education Philippines (ICEE-PHIL) 2019
Iloilo City, Philippines
October 21-22, 2019

Student Academic Advising and Services, the UST Experience

Dolores Cleofas[a*], Joycelyn Poblete[b], and Divine Angela Sumalinog[c]

[a]Department of Civil Engineering, University of Santo Tomas, Sampaloc, Manila 1008
[b]Department of Electronics Engineering, University of Santo Tomas, Sampaloc, Manila 1008
[c]Department of ChemicalEngineering, University of Santo Tomas, Sampaloc, Manila 1008

*Corresponding author e-mail address: iris_sam2002@yahoo.com

Highlights

- The rationale of the Student Academic Advising and Services (SAAS) of the UST Faculty of Engineering
- Program advising in the Faculty
- Role of Program Advisers (PAs)
- Initial results of the creation of SAAS
- Other services of SAAS

Abstract

The Student Academic Advising and Services (SAAS) is one of the units created by the Faculty of Engineering as part of its K-to-12 Transition Program. It aims to help maintain the high-quality performance of students and graduates as part of the Outcome-Based Education paradigm and match the reforms and demands of the new higher education learners who are products of the K-12 Program.

With the creation of the SAAS unit, each department assigns a Program Adviser for a certain number of students. It is envisioned that with the tutelage of the program adviser, the students will hurdle successfully the courses in which they are enrolled in. With the Department Chairs, the SAAS coordinators confer with the students, along with their parents, who are under conditional or debarred status.

Another important involvement of the SAAS unit is implementing Supplemental Instruction to students who have difficulties in their subjects.

Key Words: Program Advisers; Supplemental Instruction, K-12 Program, student advising

1. Introduction

The Department of Education (DepEd) started implementing the K-to-12 Program in Academic Year (AY) 2016-2017. In this Program, subjects or courses that were typically given to college freshmen and sophomores of the previous tertiary education curriculum are offered in Grades 11 and 12 equivalent to Senior High School (SHS). The most recent SHS curriculum shows that the courses taught in Grades 11 and 12 include Algebra, Trigonometry, Geometry, and Introductory Calculus.

One of the challenges posed by the implementation of the K-12 Program, particularly in the Science, Technology, Engineering, and Mathematics (STEM) strand, is proving that learners have acquired the

necessary and fundamental knowledge of basic science and mathematics subjects that were given in Grades 11 and 12. Considering the academic performance of the first K-12 cohort in their collegiate mathematics courses (i.e. Calculus), results suggest that the implementation of the program did not meet the standards and expectations of higher education institutions (HEIs). It is in this context that the Faculty of Engineering of the University of Santo Tomas created the Student Academic Advising and Services (SAAS) unit along with the committees created as part of the K-to-12 Transition Program. SAAS is a part of the "Selective Admission + Curriculum-based Intervention + Supplemental Instruction + Academic Advising" (SACISIAA) Program tasked to monitor students' academic performance until graduation. The SACISIAA Program is a four-component program organized to better prepare, develop, and assist students for the rigor of Engineering Education. The other components of SACISIAA are: Selective Admission through the Engineering Program (EngPro) Test administered by the Engineering Pre-Majoring Year Collaborative (EPYC) Program; Curriculum-based Intervention to strengthen the basic mathematics proficiency through an online summer course (Basic and General Engineering Mathematics course - BGEMs); and Supplemental Instruction (SI) to aid students in their pre-majoring courses.

SAAS aims to help maintain the high-quality performance of students and graduates as part of the Outcome-Based Education paradigm and to match the reforms and demands of the new higher education learners who are products of the K-12 Program. Each department, with SAAS, will advise and regularly monitor all students under their program.

The role of academic advising deals mainly with giving direction or guiding a college student about his/her academic performance and also with his/her social and even personal affairs that directly affect academic performance, if necessary.

These activities of the Faculty of Engineering are consistent with the provision of the Manual of Regulations for Higher Private Education (MORPHE) of the Commission on Higher Education, Section 45. Responsibilities of HEIs who are Centers of Excellence or Centers of Development. Section 45 states that HEIs should undertake strategic activities and projects necessary for the continuous development of the discipline. This is also consistent with the objective of CHED Memorandum Order (CMO) No. 37 series of 2012 on the Establishment of an Outcomes-based Education (OBE) System in Higher Education Institutions Offering Engineering Programs.

2. Methods

2.1 Creation of the SAAS unit

The SAAS unit was created before the start of the Second Term of AY 2018-2019. Three (3) members from the Faculty of Engineering were assigned as Coordinators, namely, Assoc. Prof. Joycelyn Poblete, Dr. Dolores Cleofas, and Engr. Erica Ocampo. For AY 2019-2020, Engr. Ocampo was replaced by Dr. Divine Angela Sumalinog.

Assoc. Prof. Joycelyn Poblete is a Professional Electronics Engineer. She completed her Masters in Engineering Program Degree at the University of Santo Tomas and has served as Chair of the Electronics Engineering Department of the Faculty of Engineering for six years.

Dr. Dolores Cleofas is a Civil and Sanitary Engineer. She completed her MS Degree in Engineering Hydrology at the National University of Ireland in Galway, Ireland and her PhD in Civil Engineering Major in Water Resources Engineering at the University of the Philippines in Diliman. She also has a

Degree in Educational Management. Before her assignment as a member of the Faculty of Engineering of the University of Santo Tomas, she was the Dean of the College of Engineering of National University, Manila from 2003 to 2012. Currently, she is also a member of the Commission on Higher Education's Technical Panel for Engineering and Technology.

Dr. Divine Angela Sumalinog is the youngest among the coordinators of SAAS. She completed her BS in Chemical Engineering, her MS in Environmental Engineering and her PhD in Environmental Engineering at the University of the Philippines in Diliman. She has done environmental consulting works before pursuing a full-time position as an instructor in the Chemical Engineering Department of UST.

2.2 Selection of Program Advisers (PAs)

Initial activities were not readily available. Through sharing of best practices among the six departments (Civil Engineering, Chemical Engineering, Mechanical Engineering, Electrical Engineering, Electronics Engineering, and Industrial Engineering) and researches on academic advising, the SAAS unit started to assign each freshman (students who were the first products of the K-to-12 Program) to a Program Adviser. The number of freshmen was distributed among Program Advisers whose names were provided by each Department. The number of Program Advisers was made proportional to the number of freshmen enrolled in a respective Program. The total number of students divided by 35 is the minimum number of Program Advisers per Department. Initially, SAAS was responsible in assigning students for each Program Adviser; the plan is to let future students choose their respective Program Adviser after enrolment via an online platform.

2.3 Role of the Program Advisers

The Program Adviser meets his/her student at least twice per term, preferably after quizzes or before major examinations. In some cases, students visited their Program Advisers more than required. These are cases of students who consult their Program Advisers not only about academic matters but also about personal affairs such as family concerns or other forms of relationships; noting that academic advising may involve giving direction or guidance to students about personal matters as well. At other times, Program Advisers would realize that their advisees need to be referred to other services including guidance counseling, health services, and conference with the department chair, among others.

The Program Adviser logs on a student's Monitoring Booklet every consultation and that includes notes on the Faculty Monitoring Sheet, an excel file created for the purpose of student advising. All information about the student, the department he/she belongs to, his/her academic conditions/grades, extracurricular activities, referrals to other services and program advisers notes are all indicated in the student's Monitoring Booklet.

Considering the provisions of the UST Student Handbook, the Program Advisers submit a list of regular, irregular, and conditional students to the respective Department Chair after the semester prior to enrolment. They assist those who are on irregular and conditional status in preparing the list of courses to be enrolled by filling-up the Pre-enrollment Form. Normally, students who are on conditional status or are on debarred status report to their PAs, to a SAAS Coordinator, and to the Department Chair.

The PAs are also tasked to monitor participation of their student advisees to the necessary Supplemental Instruction which will be spearheaded by EPYC, BGEMs, and SAAS.

2.4 Supplemental Instruction

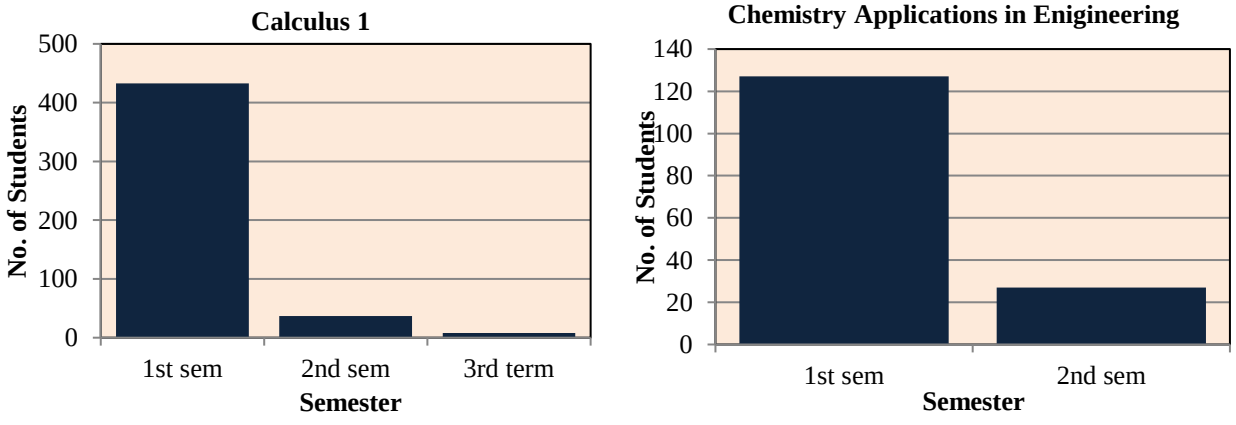
The Supplemental Instruction (SI) which is another component of SACISIAA is a mandate of the SAAS unit together with EPYC and BGEMS components. All freshmen from the STEM strand of the K-to-12 Program and those from non-STEM strands who have completed the bridging program need to take the EngPro Test. Those who do not meet the passing mark of the EngPro Test should take a Final Exam after completing the online lectures of BGEMs delivered prior to freshman enrolment. If still unsuccessful to hurdle the BGEMs Final Exam, these students are enjoined to attend Supplemental Instructions during their first freshman term. These rigorous and formative intervention programs that they have gone through are deemed to help them in successfully completing their collegiate academic work requirements. At the moment, student scholars of the UST Engineering Alumni Association, Inc (USTEAAI) have been tapped and are being trained to facilitate the supplemental instruction activities.

3. Results and discussion

Irregular students and those who are on conditional status after the first term of AY 2018-2019 are commonly those students who failed in Calculus 1. After that term, SAAS provided program advising to the concerned students. Considering two major courses of the first term, Calculus 1 and Chemistry Applications in Engineering, it appeared that with the creation of the SAAS unit, there is a considerable decline in the number of students who failed when they re-enrolled the courses from all departments of the Faculty of Engineering. Table 1 showed the number of failures in the courses after the first term, second term, and special term of AY 2018-2019. The basis of the data presented is the 1206 freshmen enrollees during the academic year. Figure 1 shows the statistics of failures in relevant courses.

Table 1. Number of Failed Students in Relevant Courses, AY 2018-2019.

Subjects	1st Term	2nd Term	Special term
Calculus 1	433	37	8
Chemistry	127	27	
Calculus 2		161	86
Physics 207A		148	152
Physics 207B		154	58



(a) (b)

Figure 1. Statistics of Failures in (a) Calculus 1 and (b) Chemistry Applications in Engineering, AY 2018-2019.

Figure 1 shows that there is a considerable decline of failures from the first term to the second term and finally on the special term when Chemistry Applications in Engineering was not offered.

This means improved performance of the students which may not be totally attributed to the presence of program advisers but it is believed to be a factor. Some students admit that the presence of the program advisers provided them with more confidence considering that they have a "family" within the Department – people who guide them and encourage them to be better students. Nowadays, the concern is not totally academic but more on the mental health and emotional stability of the students. Referring them to the appropriate university services as deemed necessary was also a contributing factor to support their mental health.

On the part of some faculty members who became Program Advisers, they were able to realize that they can play a more important role aside from being professors or instructors to their students. Effective program advising can make their students perform better in school.

Table 2 lists the number of enrollees and the number of failures in relevant subjects during the second and special terms which are also shown graphically in Figure 2 and Figure 3. The number of students who took the subjects for the first time and those who are repeaters is indicated for the special term.

Table 2. Statistics of Enrolment and Failures in Relevant Subjects, AY 2018-2019.

Subjects	2nd term		Special term		
	Enrolment	Failed	Enrolment		Failed
			First takers	Repeaters	
Calculus 2	764	161	396	161	86
Physics 207A	765	148	396	148	152
Physics 207B	764	154	396	154	58

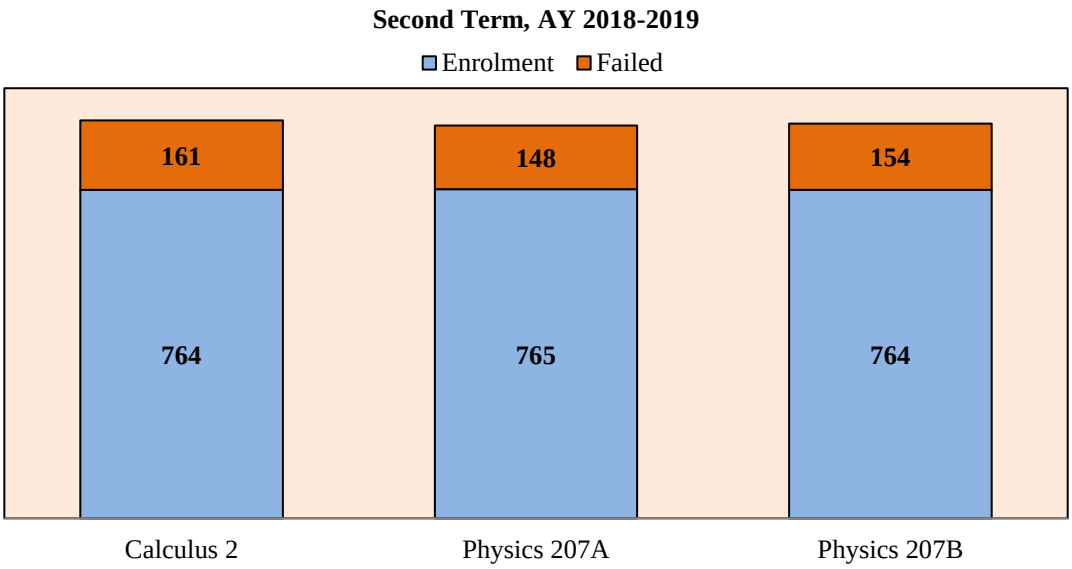


Figure 2. Comparison of Enrolment and Failures during the Second Term in Relevant Subjects, AY 2018-2019.

Figure 2 shows 21.07 percent of students failed in Calculus 2, 19.35 percent in Physics A and 20.16 percent failed in Physics B during the second term. Those who failed repeated the subjects during the third term together with those who recently passed Calculus 1 on the second term. A comparison of the number of enrollees and those who failed in Calculus 2, Physics A and Physics B during the special term is shown in Figure 3.

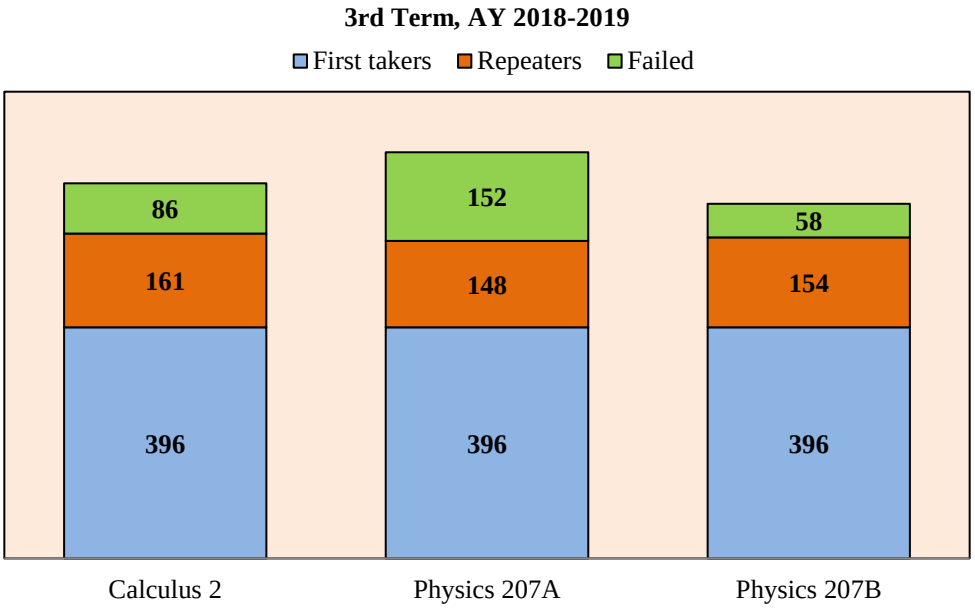


Figure 3. Comparison of Enrolment and Failures during the Special Term in Relevant Subjects, AY 2018-2019.

The figure above also indicates the number of students who took the subjects for the first time and those who repeated the subjects. As shown, 17.2 percent failed in Calculus 2, 31.3 percent failed in Physics A, and 15.9 percent failed in Physics B. There is a considerable decrease in percentage of failures particularly in Calculus 2 and Physics B and there is a slight increase in the percentage of failures in Physics A. It is natural for students to have more difficulties during the special term compared to regular terms because of the shorter term, an estimated 5 weeks of fast-paced instructions, and this might have affected the performance of students in Physics A. Generally, there is an improved performance of students during the second term and during the special term when program advisers are there to guide the students.

The result of the SI is not yet considered at the moment because SI formally started this first term of AY 2019-2020.

4. Conclusions

The creation of SAAS has potentially created a safety net for the students. The students cannot completely fall or fail incessantly because of the intervention components created within the UST Faculty of Engineering. That is, should they fail in introductory diagnostic exams; they still can rely on the SI to help them stay on track.

Program Advisers on the other hand realized their important roles in molding future successful engineers.

Further research should include a more detailed examination of students' individual academic performance to deeply assess the effect of program advising and other components of SACISIAA. Other parameters to measure the success of the SAAS unit can also be considered for further research.

Other factors affecting students' academic performance like the senior high school where they came from together with the curriculum used and the qualifications of the teachers who taught the senior high school subjects may be a good subject for further research. This way, we can formulate policies for improvement.

Acknowledgement

We are thankful for the encouragement given by Dean Philip Marcelo of the Faculty of Engineering, for those who helped in data gathering and most of all to Engr. Rajiv Abdullah, Department Chair of the Civil Engineering Department for his invaluable assistance in the preparation of this paper.

References

Commission on Higher Education (2012). CHED Memorandum Order No. 37 series 2012. Policies, Standards, and Guidelines in the Establishment of an Outcomes-based Education (OBE) System in Higher Education Institutions Offering Engineering Programs.

Commission on Higher Education (2008). Manual of Regulations for Higher Private Education, 2008.

Program Advising. Chapman University. https://www.chapman.edu/students/academic-resources/advising-portal/program-advising/, accessed August 6, 2018.

Program Advising. University of the People: The Education Revolution. https://www.uopeople.edu /student-experience/support/program-advising/, accessed August 6, 2018.

UST (2018), Student Handbook.