

Program Review – Annual Program/Discipline Update

Administrative Response and Follow Up

Winter 2021-2022

Program/Discipline: **Engineering**

SAC Chair(s): Jenna Bell, David Goldman

SAC Administrative Liaison (Director or Program Dean): Diane Shingledecker

Other Dean(s) or Director(s):

Department Chair(s):

Date: March 16, 2022

This section is for Administration to provide feedback.

To be prepared by Program Dean(s) and reviewed by Pathway Dean and Associate Vice Presidents(s).

1. Strengths and successes of the program as evidenced by the data, analysis and reflection:

Thanks to the ENGR SAC for successfully completing this continued pilot of the new Annual Program Updates. This is a new format for all of us, and it is clearly a learning time for all involved in changing over to this yearly format and questions. This ENGR Annual Program review landed on top of the continued challenge of teaching remotely throughout the academic years '20-'21 and '21-22, after quickly pivoting to completely remote instruction for a program that previously taught all but one 1-credit course (ENGR 100) on-the-ground. The ENGR program has had the additional challenge this year of doing this while being “down” two full-time instructors: one who has been on an FMLA all year and another who has been released 100% from his ENGR teaching position all year to work on an NSF grant (50%) and help the OMIC center with their curriculum to get them up-and-running this year (50%). This loss in personnel who can teach, work on curriculum updates, etc. has been felt in writing this report and addressing needs, challenges, etc. noted in this report. Kudos to your SAC for meeting the needs of your current students despite all this! It was especially great to see part-time Physics faculty in our new PCC Pathway be hired to teach ENGR courses this year.

Overall, the department has maintained their course success rates while totally flipping their teaching modality for the past two years (see table below this paragraph) - this is no small feat, and this has been noted and is greatly appreciated by this administrator and others!

SAC Code	Campus	Subject Code	Course Number	Academic Year	Total Enrollment	Total Success Rate (%)
ENGR	0 - College Wide			2020-21	1077	81.2
ENGR	0 - College Wide			2019-20	1238	83.7
ENGR	0 - College Wide			2018-19	1370	82.4
ENGR	0 - College Wide			2017-18	1388	84.3
ENGR	0 - College Wide			2016-17	1341	86.3

2. Areas of challenge or concern, if any:

A. The largest concern for the ENGR department is the drop in enrollment that has occurred through the time the institution has been restricted to remote operations due to COVID-19. The ENGR SAC noted in their report that they feel students went straight to 4-year institutions (such as PSU) when they returned to offering on-campus classes with a vaccine requirement rather than continuing in remote classes at PCC. We also suspect (having heard anecdotally from students) that those students who are continuing to take classes virtually are doing so at institutions that had fully online programs in Engineering prior to the pandemic (where the ENGR department only has one, 1-credit fully developed & approved course through the OL department at PCC). As in many other programs and departments at PCC, the challenges facing students during the pandemic may also have led to students putting their education on hold due to many factors these past two years that have been beyond their control.

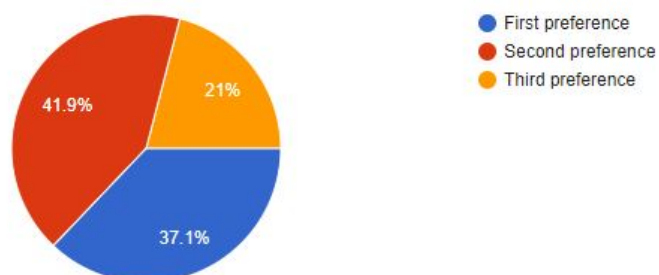
It should be noted that we are now in the queue to develop ENGR 101 and ENGR 114 as high-priority development courses with the OL Course Design and Development developers during the '22-23 academic year. This will help the ENGR department have more options in course modalities moving forward. These two courses are emphasized elsewhere in your ADU report and my response, so I'm delighted that they were chosen to both be developed as fully online courses next year. This should help increase enrollment with students who are looking for online courses moving forward. I support and will advocate for the development of more online ENGR courses where they are a good fit after these next two courses are developed.

It is the goal of PCC and therefore this department to offer fully online, synchronous remote and on-campus courses into '22-23 and beyond. To help understand what current ENGR students' thoughts and preferences are related to remote and on-campus modalities, I worked on an "informal" student survey with three of the FT faculty in ENGR during Winter term. (Note: We did not include the totally online modality in this survey since we still only have one fully online course (ENGR 100) that we can offer at this point during '22-23.) We had 62 students respond to the survey that was sent out in all ENGR courses. Here's a sample of the data we collected:

Whether you have taken Remote and/or on-campus ENGR classes, please pick your preference for each option below. If you pick other, please explain.

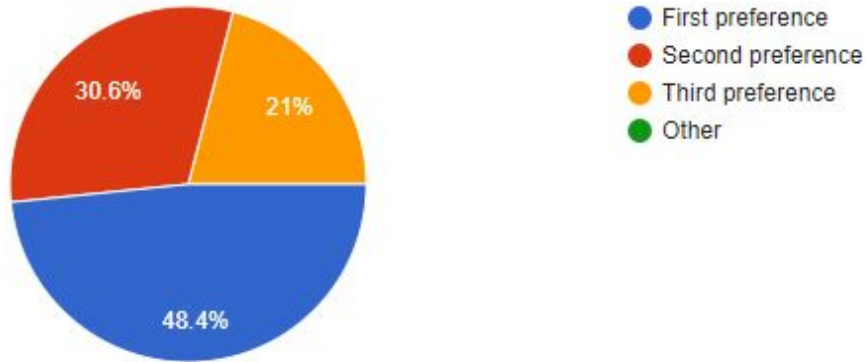
On-campus classes (only when the potential safety risk of COVID-19 is not an issue)

62 responses



Remote (synchronous) classes (these have weekly live zoom lectures):

62 responses



While this was not a perfectly designed survey tool, it does show that students prefer a variety of course modalities moving forward, not just all on-campus classes. I have asked the ENGR SAC to schedule both remote synchronous and on-campus classes beginning fall term. We will need to work with advising and marketing to get the word out that the program is back to offering on-campus classes and support services, so that we can get ENGR enrollment back to where it used to be.

B. While the SAC stated that you would keep an eye on success rates across modalities, gender, race, and Pell Grant eligibility, you did not point to specific actions beyond working on ENGR 101. (I will address ENGR 101 in “C” below). The course success rate for ENGR 114 (Engineering Programming) broken out by gender is shown in the following table:

Course Number	Academic Year	Total Enrollment	Total Success Rate (%)	Female Enrollment	Female Success Rate (%)	Male Enrollment	Male Success Rate (%)	Nonbinary Enrollment	Nonbinary Success Rate (%)	Unknown Enrollment	Unknown Success Rate (%)
114	2020-21	133	78.2	26	69.2	104	79.8			3	
114	2019-20	141	90.8	16	100	119	89.1	2		4	
114	2018-19	155	82.6	24	66.7	123	84.6			8	100
114	2017-18	141	77.3	17	88.2	121	75.2			3	
114	2016-17	97	83.5	17	82.4	79	83.5			1	

The success rate for female students in ‘18-19 and again in ‘20-21 was below 70%. This is something I would like the ENGR SAC to look into and consider ways you can improve on this. Several stats on this were mentioned in the ENGR ADU report:

1. Support faculty participation in the Diversity-Focused Professional Development for Community College Computing Faculty - Lighthouse CC. The Lighthouse program is centered on computer science; however, I believe many parts of their online course for faculty would be directly applicable to Engineering. There is a new online course starting in June 2022 that is free of charge. In the past, they offered a \$550 honorarium for those participating in the research portion of the course (completing the full course, the course

evaluation survey and participating in the post-course online focus group). I am looking into whether this is still true for the June 2022 online class. I would encourage at least one of our ENGR faculty to participate in this.

2. Have faculty teaching this course incorporate the Persistence Project pillars. One PT ENGR faculty member did this during Winter Term '22. I would like to see faculty do this in all sections of ENGR 114. I also support hiring embedded tutors in these classes in '22-23.

I look forward to working with you on other ideas on how we can address female success rates in ENGR 114.

C. The report reflected that “The ENGR 101 gateway course, over the past five years, had an overall lower success rate than the 200 level classes.” I dove into the data a bit in regards to this class. I specifically looked at the success rate of students by race in ENGR 101 and found this:

Academic Year	Total Enroll	Total Success Rate (%)	Asian Enroll	Asian Success Rate (%)	Black Enroll	Black Success Rate (%)	Latinx Enroll	Latinx Success Rate (%)	International Success Rate (%)	White Enroll	White Success Rate (%)	Multiracial Enroll	Multiracial Success Rate (%)	Unknown Enroll	Unknown Success Rate (%)
2020-21	251	78.5	21	90.5	13	53.8	41	68.3		145	82.1	9	100	16	68.8
2019-20	257	79.8	19	84.2	10	50	31	77.4	85.7	137	80.3	23	82.6	27	81.5
2018-19	277	78.7	26	65.4	3		41	73.2	61.1	144	84	16	87.5	27	85.2
2017-18	293	85	23	100	10	80	28	78.6	93.8	182	84.1	12	83.3	20	80
2016-17	270	88.5	21	85.7	5		22	81.8	90	155	87.7	14	85.7	28	96.4

(Note: Categories were hidden where student counts were so low that percentages were not calculated.)

1. As in “B” above, I would like the SAC to work on culturally responsive actions to specifically address the lower success rates for BIPOC students. Addressing belonging through the Persistence Project is a step in this. One full-time faculty incorporated this during Winter term and we are looking at repeating this during Spring term along with adding an embedded tutor. I will help track success data in these sections by CRN/race to see if this moves the needle on this over time.
2. I support the adjustments to ENGR 101 stated in the ADU report along with incorporating SVS (spatial visioning training) where possible into this course starting with Spring term '22. I look forward to being updated on how this goes and where I can help in implementing all of this.

I hope the Lighthouse Training will provide you with strategies on how to address this success gap in ENGR 101 along with assisting you in addressing the success gap in ENGR 114.

D. I appreciate the transparency of the ADU report statement that “The ENGR SAC has not, in the past, taken many steps in regards to maintaining high success rates, addressing lower success rates, and have not taken actions in the past to understand or address lower success rates” - and I am concerned about this statement. I am hopeful that the actions included in this report point to a change in this along with the actions I have asked you to take. I will also recommend additional professional development opportunities to help with this shift in mindset. If I can take a larger role in assisting with your movement forward in this, please let me know.

3. Reflection on goals and resources:

As you move forward with the action items listed in your ADU report and my response, please lean into support from your Assessment Coach, your online curriculum designers, and myself as

your SAC liaison. If you continue to be “down” one FT faculty next year, I will advocate to hire a one-year full-time temporary instructor to counteract this loss. Your other full-time faculty who was on 100% release this year will only have a 50% NSF grant release next year which should help move all this work forward as well.

Please work closely with me around budgetary asks as you plan to bring courses back to campus and continue others remotely. Our CCET/ENGR IST can help with inventorying current equipment, identifying service and replacement needs, and sourcing new purchases. The earlier we start on this, the better as all of this takes time with continued COVID and supply chain issues.

4. Recommended next steps:

Proceed as planned on program review schedule

Follow up conversation needed with SAC, Dept Chair(s) and Dean

5. Additional comments/questions:

Again, thank you for the hard work that you continue to put into supporting your students and each other at PCC.