

.Another negative perception is that you need to be very proficient in math in order to be an engineering professional, what for most jobs is completely not true.

2. Goal B: Ensuring Program Alignment by Strengthening Partnerships Changes in the landscape of the local manufacturing base
3. Goal D: Improving External and Internal Communications: Competing program from other institutions.
4. Goal F: Enhancing Organizational Effectiveness: Computers obsolescence every two years due to software requirements changes

#### Goals of the Program

<b>Ref</b>	<b>Goal</b>	<b>Actions to be taken</b>	<b>Person in charge</b>	<b>Completion Date</b>
S1 /O1 O3	Write and offer medical devices, UAV/drones design, consumer goods and Arduino specific engineering design classes.	Write classes and submit to Curriculum for approval	Micic, Li	SP 2019
W2	Provide the Students with clear pathways for achieving their educational goals: Sustain FabLab activities	Need a budget for materials and equipment to sustain our competitive advantage, additive manufacturing fabrication lab, going on for the next two years. I need about \$10,000 per year for 3D printer maintenance, purchasing of 3d printing materials, and other materials and tools. This equipment allows students to contextualize learning and bring home finished prototypes of their project. It contextualize different areas of design and engineering.	Micic, Li	FA2023
S3 /w2	Update computers in the lab to allow PDM, and advanced Solidworks functionalities	Upgrade PST224 and PST227 with more powerful dual screen computers to allow use of all the Solidworks add-ons and Autodesk applications. Currently it's impossible to use Solidworks photorealistic rendering, some of the Autodesk functionalities and some of the simulations due to the computers power constrain.	Micic, Li	SP2022

S4 /w2 /O1 /O3 /T4	Updating Educational Infrastructure: Replace computers every two years to keep with the update in software	Replace computers every two years to keep up with updates in the software development and current industry practice. Explore and find all internal and external fundings.	Micic, Li	FA2025
W1	Increase non-traditional students' participation (female students) by creating the soft products development class.	Write curriculum for the soft products development class using ExactFlat or similar software where students design soft products, like purses, fashion elements, apparels, phone holders and other soft products items of usual interests to females.	Micic,	FA2023

S3 /W2	Investigate the development of expansion of educational program to align with the needs of the current and future labor markets and develop graduates with the skills to satisfy the workforce demand: Offering new specialized certifications	Repeat success of SolidWorks certification program by offering standard industry certification for Autodesk programs. There is increase in proliferation of AutoDesk Fusion360 with local industry, and student certifications as Certified Autodesk Users for Fusion360 will greatly enhance their employability.	Micic, Li	FA2019
T3 /O3	PERKINS 2018/19 Reverse engineering training using computerized optical comparator	Teach students how to use modern computer controlled optical comparators to reverse engineer complex parts.	Micic, Li	FA2021

O2 /S4	Establish nanotechnology and MEMS design and inspection lesson across	Establish the nanotechnology and MEMS design class	Micic, Li	Sp2022
W3	Increase faculty diversity and increase the likelihood of enrollment of nontraditional participants (female students) by hiring female part-time instructor.	Hire a qualified female part-time instructor for FA 2019.	Micic, Li	FA2020
W3	Increase class offerings	Increase class offerings through offering morning class sections	Micic, Li	FA2025
W4	Hire new part-time instructors	Increase class offerings by hiring part-time faculties. Open hiring pool in Fall 2019	Micic, Li	SP2020
S3 /O3	Converting Verification of Completion Certificate to the Certificate of Achievements	Submit a new certificate to curriculum for approval	Micic	FA2020
W3	Online teaching certifications for the ENGT instructors	All ENGT part and full-time instructors to complete CTX Online Teaching Certification.	Micic	FA2019

S2 /S4 /W2 O1	Update computers lab to allow PDM, and advanced Solidworks functionalities	Upgrade PST224 and PST227 with more powerful dual screen computers to allow use of all the Solidworks add-ons and Autodesk applications. Currently it's impossible to use Solidworks photorealistic rendering, some of the Autodesk functionalities and some of the simulations due to the computers power constrain.	Micic	SP2020
O2 /T3	SWP2-2 Incorporate materials science nanostructure characterization in NPD103, and ENGT131 classes	Using the SEM, EDX and SE Detector incorporate the practical aspects of micro and nanoscale design technologies	Micic	SP2020
T1	Participate in the campus events to promote the ENGT department	Faculties and Students participate in campus and off-campus events to promote the ENGT department. Increase participation by 50% by participating in every single high school fairs/promotion activities (currently ENGT does about 50% of activities).	Micic	SP2021
O1	Write and offer industry specific classes	Write and offer medical devices, UAV/drones design, consumer goods and Arduino specific engineering design classes.	Micic, Li, PT faculties	SP2021

S3 /W3 /T2	Become regional leader and reference center for Solidworks, based on the strength of full-time instructors	Keep leadership position as a most knowledgeable SolidWorks institution in the area by continuous education of full-time instructors, and by attending relevant industry conferences	Micic, Li	FA2020
S1	Increase program attractiveness to general education students by adding general education component to the appropriate classes	Create ENGT137 Introduction to Making Useful Things and Industrial Design Using Fusion360, and add general education component to it under fine art category for plan A.	Micic, Li	FA2022
W4	Establish program SLO and align them with iSLO.s	Establish program SLOs and align them with institutional SLOs. Update and revise SLO's as needed. By end of FA2019 perform SLO evaluations in 100% of classes.	Micic, Li	SP 2020
W3	Revise programs to streamline completion	Submit revised programs to curriculum for approval	Micic, Li	SP 2020
S1	Create online/hybrid program	Convert all core classes to online/hybrid by FA 2020	Micic, Li	SP2020

S1	Start teaching cloud-based CAD	Write classes for OnShape and Fusion 360	Micic, Li	FA2020
W2	Increase non-traditional class participation	Hire female instructor; create soft product development class	Micic, Li	FA2021.

## SLO

The program does have defined SLOs for all the classes. However, as there are very few concurrent classes offered, we have not performed SLO's assessments consistently. For the SLOs performed, the results were very high. This is because the SLOs are well aligned with students' lab activities, and are example of "take home SLOs", which are very tangible in nature. Students either make the model or not. The faculty will assure that all the participating students complete all the tasks and learn how to make the models and drawings. The high SLOs are verified by the very high employability of our graduates (Perkins 4), where essentially only the students who choose not to work do not have a job. Only class with concurrent offering which was done the SLO was ENGT117. The results are presented below

**Cerritos College SLO Committee - Assessment Results - Three Year Comparison (Fall 2015 to Spring 2018)**

Engineering Design Technology Department	Semester	Number of Assessments				Percentages		
		Good	Satis.	Emergent	Total	Good	Satis.	Emergent
ENGT 117	Spring 2018	-	-	-	-	-	-	-
	Fall 2017	-	-	-	-	-	-	-
	Spring 2017	-	-	-	-	-	-	-
	Fall 2016	90	25	25	140	64.3%	17.9%	17.9%
	Spring 2016	85	15	40	140	60.7%	10.7%	28.6%
	Fall 2015	-	-	-	-	-	-	-
	<b>Total</b>		175	40	65	280	62.5%	14.3%
<b>Report Totals</b>	Spring 2018	-	-	-	-	-	-	-
	Fall 2017	-	-	-	-	-	-	-
	Spring 2017	-	-	-	-	-	-	-
	Fall 2016	90	25	25	140	64.3%	17.9%	17.9%
	Spring 2016	85	15	40	140	60.7%	10.7%	28.6%
	Fall 2015	-	-	-	-	-	-	-
	<b>Total</b>		175	40	65	280	62.5%	14.3%

No data for ENGT 103, 117, 131, 138, 151, 153, 158, 160, 237, 256, 257, 258, 259, 250, 265, 266

## Conclusion:

In the last 7 years, faculties have significantly evolved and improved the ENGT department. All the outdated courses were deactivated, new courses were created which are based on the local industry needs. The programs have a great reputation in the South Bay industry, especially within the aerospace and government sub-contractors. The demand for qualified CAD operators and designers/drafters outpaces the supply. We are trying to increase the program enrollment by creating a network of articulated PLTW agreement with local high schools. This was done in the past 5 years and resulted in a steady supply of bridge and traditional students, in difference to previous demography of practically exclusive life learners. To increase enrollment, we are planning further internal outreach and external outreach to local high schools. To increase the program's attractiveness, we are developing several cutting-edge classes. In collaboration with PMT and NPD program, we are looking at developing the first micro design/MEMS/Nano technology design classes in California at community college level. To increase the non-