Instructions: The first column below matches key words in TracDat where you will enter the requested information. The second column fully describes the information that the IPBT is requesting. It also represents the information you would see if you pressed the help button (a question mark) by each box in TracDat. You will be able to copy and paste or type in your information into the TracDat boxes. **SAVE OFTEN WHILE ENTERING INFO!!!!!** ALWAYS keep a soft copy of your work in your files to ensure that your work is not lost. You will save program review as a pdf through the print option of your browser. This is the document you will send to your Dean and it is the document that will be posted on the De Anza website. If you have questions, please refer to your workshop handout (http://www.deanza.edu/slo/tracdat.html) or contact: papemary@fhda.edu.

Section I: Overall program description (including CTE)
Section II: Overall student enrollment and success
Section III: Equity
Section IV: Assessment Cycle
Section V: Resource requests

In TracDat. Limit narrative to 100 words; bullet points encouraged

	Information Requested	Explanation of Information Requested. ? TracDat Help button will reveal the same cues (sorry no hyperlinks)
	Program Description	
	Department Name:	**Engineering**
	Program Mission Statement:	• Students will demonstrate familiarity with the wide range of engineering disciplines and the general requirements and skills necessary to pursue a career in those areas. • Students will demonstrate a general understanding of engineering project development cycle including analysis, design, implementation, documentation, and refinement. They will also demonstrate a familiarity with the tools commonly used during those phases. • Students will demonstrate the necessary discipline specific technical knowledge and skills required to successfully transfer to an engineering baccalaureate program. • The SLO's and Department mission align with the College Mission and Core Competencies by: • challenging students of every background to develop their intellect, character and abilities and skills in relation to engineering – including the development of "soft" skills such as group and community action and leadership and social responsibility • preparing students who wish to pursue studies and/or careers in engineering to realize their goals; • preparing students to effectively communicate technical and other ideas through writing

		and speaking • expecting students to be able to find and generate information and to judge its validity and usefulness through critical judgement • establishing connections between engineering and cultural, social and environmental values and actions
I.A.1	What is the Primary Focus of Your Program?	Transfer
I.A.2	Choose a Secondary Focus of Your Program.	Career/Technical Support
I.B.1	# Certificates of Achievement Awarded	
I.B.2	# Certificates of Achievement-Advanced Awarded:	
I.B.3	# ADTs (Associates Degrees for Transfer) Awarded	
I.B.4	# AA and/or AS Degrees Awarded:	
I.B.5.	Strategies to Increase Awards	
I.C.1	CTE Programs: Review of Perkins Core Indicator and SWP Outcomes Metrics	
I.C.2	CTE Programs: Labor Market Demand and Industry Trends :	
I.D.1	Academic Services and Learning Resources: # Faculty Served	

I.D.2	Academic Services and Learning Resources: # Students Served	
I.D.3	Academic Services and Learning Resources: # Staff Served	
I.E.1	Full Time Faculty (FTEF)	2.1
I.E.2	# Student Employees	0 no change
I.E.3	Full-time to Part-time ratio % of Full -time Faculty Compared to % Part-time Faculty Teaching	0 No change = there are no FT faculty assigned to this department
I.E.4	# Staff Employees	0 no change
I.E.5	Changes in Employees/Resources	There has been no apparent impact from last year to this year.
	Enrollment	
II.A	Enrollment Trends	Enrollment **growth** during the past 5 year review period was 12.6%., which is very positive considering that during the same period, overall campus enrollment **declined** by 15.8%. Fluctuations in enrollment over the 5 years are to a large part a result of the number of qualified instructors who are available to teach in this discipline and constrained by our ability to recruit part-time instructors. One of long-term part-time instructors did not teach for a part of the most recent report year and this had an effect on the number of sections offered. Also, the relatively high load for the introductory engineering course prevents part-timers from teaching that course as many times as would be allowed for a lower credit course. In short, the enrollment potential for the department is relatively high and enrollments, though growing over 5 years, are limited by lack of any full-time faculty in the department and by the time and effort required to recruit, train, and retain qualified part-timers. We expect a continuing moderate growth rate in this program, and at the current rates of growth, we feel that in the near future a full-time faculty position will be justified to support significant enrollment with no existing FT faculty assigned to the department. The department is considering offering hybrid sections of some courses, which may also be a source of growth and, because of the lesser time required for an instructor to be on campus, enable us to hire more qualified faculty from industry.
II.B	Overall Success Rate	Over the past five years the overall student success rates have increased by 9% from 77% to 86%. This is a continuation of a long term positive trend, and the current success rates are some of the highest in the Division.
II.C	Changes Imposed by	

	Internal/External Regulations	
	Equity	
III.A.1.	Growth and Decline of Targeted Student Populations: 2017-18 Enrollment	During the 2017-18 period the proportions of targeted student populations in engineering is very close to the overall college population: African-American 3.3% engineering vs 4.1% overall, Filipinx 8.1% engineering vs 6.7% overall, and Latinx 22% engineering vs 24.8% overall. This is an amazing accomplishment when compared to past student engineering populations and compared to numbers reported from other engineering programs across the U.S.
III.A.2	Targeted Student Populations: Growth and Decline	Over the five year period, enrollment of targeted groups has increased 37%, a relatively high rate given the overall 9% enrollment growth during the same period. These numbers do not reflect an increase in the number of women enrolled, which, though not usually considered a targeted group, is a population that have traditionally been underrepresented in engineering programs. Other targeted groups do not have enough enrollment in a small program to make any statistically valid conclusions.
III.B.1.	Closing the Student Equity Gap: Success Rates	For the 2017-18 review period the equity success gap for targeted groups is: African American 1% Filipinx 2% Latinx 9% This equity gap is one of the lowest in the division, and certainly a positive anomaly in a technical field nationally characterized by extreme differences in underrepresented enrollment and success. The department has made great efforts to recruit instructors who are sensitive to a wide variety of students. The department has also encouraged student directed projects and employed curriculum that emphasizes topics of interest to our student population, all of which appears to encourage all students nearly equally. The relatively higher rate for Latinx students is being addressed by our STEM director and counselors who are considering programs specifically aimed at encouraging and supporting Latinx students in STEM.
III.B.2	Closing the Student Equity Gap: Withdrawal Rates	Withdrawal rates for all targeted populations are about 8% (except for Latinx at 6%) vs 7% overall. This does not seem to be a significant difference. Again, our STEM team is looking at ways of reducing this rate for all groups.
III.B.3	Closing the Student Equity Gap: 2017-18 Gap	The overall equity gap has varied over the five years from about 8% in 2013-14 to 9% in 2017-18 and 4%, 7%, and 0% in the intervening years. In a relatively small program these variations are most likely the result in variations in both student populations and instructors and it is difficult to draw conclusions about any specific group. The differences between success rates (gap) or specific ethnic groups and all students over the years vary

		from African American: 2%, -13%, 9%, 3% and 1% Filipinx : -2%, -3%, -3%, -3%, 2% Latinx : 10%, 8%, 8%, 2%, 9% (where - means the targeted group had higher success rates than the overall population) It appears, as stated above, that the department should take a closer look at how Latinx students can be better supported.
III.C	Action Plan for Targeted Group(s)	Our STEM Support group, led by Yvette Alva-Campbell, is investigating ways in which we can better support all targeted groups, but Latinx students in particular. We would like to provide some counseling services to targeted STEM students (including dissemination of information on tutoring and financial and other student support services).
III.D	Departmental Equity Planning and Progress	Please see response to IIIC.
III.E. Yes/No Box	Assistance Needed to close Equity Gap	Y
II.F. Drop down box with goals	Integrated Plan goals: current student equity data and action plan	
	Assessment Cycle	
IV.A	PLOAC Summary	Unable to run report. This department has no full time faculty assigned and has not as yet completed the assessment cycle during the reporting period. With current changes in part-time SLO responsibilities, PT engineering faculty are being trained in
IV.B	SLOAC Summary	Unable to run report. This department has no full time faculty assigned and has not as yet completed the assessment cycle during the reporting period. With current changes in part-time SLO responsibilities, PT engineering faculty are being trained in
	Resource Requests	
V.A	Budget Trends	For many years the low enrollment and low success rates of engineering have limited our ability to request funding for laboratory equipment and facilities. With the very significant increases in enrollment and success during the past five years and the long neglect of existing equipment and supplies while at the same time recognizing the current financial hardships faced by the District), we would like to request a modest equipment budget that will support a reinvigorated program and provide necessary, current, and relevant laboratory supplies and equipment for our students.

V.B	Funding Impact on Enrollment Trends	As described above, providing a modest equipment budget for the engineering program will encourage student projects that enhance their educational experience, provide engagement and excitement, and meet the hands on component of curriculum required by transfer institutions.
V.C1	Faculty Position(s) Needed	Growth
V.C.2	Justification for Faculty Position(s):	With 100% of sections taught by part-time faculty and with a very significant growth in enrollment and success, we anticipate a need for a full time faculty member in the near future
V.D.1	Staff Position(s) Needed	
V.D.2	Justification for Staff Position(s):	None currently, but in the past the physics lab technician had provided significant support for the engineering program, and if a replacement for that position is funded, we would like to continue the close relationship between departments.
V.E.1	Equipment Requests	See V.E.2
V.E.2	Equipment Title, Description, and Quantity	The department has submitted a modest equipment request totaling $5,800 to the Dean for review and divisional prioritization. The equipment request includes 4 additional student lab stations for each of the major engineering courses offered (the current equipment means that students must share in groups of 3 - 4 and we would like to reduce the amount of required sharing and increase individual student participation): Engineering 10 (Intro to Engr): 6 classroom lab station with basic mechanical and electrical tools necessary for student projects and computer aided design software Engineering 37 (Intro to Circuits): 6 classroom lab stations including circuit boards, electronic components, soldering facilities, multimeters, and circuit simulation software Engineering 35 (Statics): wood, plastic, and metal supplies and tools; mechanical design modeling software
V.E.3	Equipment Justification	In order to prepare students for transfer to 4 year engineering programs (see PLO's in Program Mission Statement), we must provide an adequate and up to date laboratory facility. Currently students are limited in the projects and experiments they can do by the lack of adequate equipment. Students are also forced to share equipment in larger groups - thus preventing individual participation and engagement. Students require adequate facilities to practice and demonstrate discipline specific knowledge and skills (see PLO's) and also require adequate equipment and supplies to implement and demonstrate successful completion of an engineering project (see PLO's)
V.F.1	Facility Request	
V.F.2	Facility Justification	
V.G.	Equity Planning and Support	We have a serious need for faculty staff development opportunities that enhance faculty knowledge and skills around best equity practices and that are specifically targeted to STEM programs.
V.H.1	Other Needed Resources	We could use additional tutoring and counseling support for STEM students; both in recruiting underrepresented students into engineering and enhancing their success. A STEM dedicated counselor who is familiar with engineering programs and their requirements and who is familiar with the special needs of students underrepresented in engineering disciplines (including women) would be extremely beneficial. We would like to provide a closer relationship with existing pathway programs such as MPS, Puente, etc. to provide an enhanced opportunity for underrepresented students to participate in engineering opportunities

V.H.2	Other Needed Resources Justification	The startling lack of underrepresented students (including women) in engineering disciplines is a well-documented national issue. As US demographic trends continue, unless we find a way to engage these underrepresented groups in engineering, the future economic health of our nation will be severely compromised. Our department has made truly astounding gains in equitable recruiting and success, but the above resources are needed to continue our progress.
V.J.	"B" Budget Augmentation	
V.K..1	Staff Development Needs	Equity training addressing very specific STEM issues, including adequate funding for (100%) part-time faculty. Additional funding for part-time faculty to update and improve curriculum.
V.K.2	Staff Development Needs Justification	
VI.	Closing the Loop	
	Submitted by:	Jerry Rosenberg and Manizheh Zand
	Last Updated:	4/15/19