

Note: revisions have been highlighted. The first column below matches the list of requested information as indicated on TracDat. The second column is where you can input your data at this time. The third column represents the information you would see if you pressed the help button (a question mark). You will be able to copy and paste or type in your information from the center column directly into the APRU on TracDat. Save this word doc in the following format: s12apru\_deptname. Last steps, remember, you will be uploading this copy in to the Trac Dat, Documents file. ALWAYS keep a soft copy of your work in your files to ensure that your work is not lost. Please refer to your workshop handout or contact: [leewheatcoleen@deanza.edu](mailto:leewheatcoleen@deanza.edu) if you have questions.

Information Requested	Input your answers in columns provided. Use word wrap. Note: reference documents can also be attached. Make sure to note the name of any reference documents in your explanations.	? Trac Dat Help button will reveal (sorry no hyperlinks)
I.A Department Name:	MANUFACTURING & CNC TECHNOLOGY	
Program Mission Statement:	<p><b><u>Program Description and Mission</u></b></p> <p>The Manufacturing and CNC Program (MCNC) offers broad yet in-depth curriculum that imparts a strong foundation for direct employment in local industries or transfer to a four-year college. Diversification is the hallmark of the program.</p> <p>The MCNC Technology program offers state-of-the art instruction in computerized machining, model making/rapid prototyping and materials processing. The curriculum is ideally suited to those who are new to the field, as well as conventional machinists and machine operators who wish to update their skills and advance in this rapidly changing industry. The Skills Certificates and Certificate of Achievement in Manufacturing Technician are the initial point of entry into the Manufacturing and CNC program. Students who complete the program will have a solid foundation in basic manufacturing systems and processes with the opportunity to choose a further specialization in the areas of advanced set-up,</p>	<p>You may create a new one or copy from your 2008-09 comprehensive program review.</p>

	<p>operation, programming, metrology and inspection</p> <p>The program is also a primary choice for many Silicon Valley engineers, designers, planners and purchasers who wish increase their “hands on” skills and overall knowledge of the design and manufacturing process in order to advance their careers.</p> <p>Examples of career possibilities include: Computer Numerical Control Machinist, Product Model Maker, Computer Numerical Control Programmer, CNC/Research &amp; Development Machinist, Systems Technician, Manufacturing / Engineering and Industrial Engineering Technician.</p> <p>DeAnza College’s Manufacturing and CNC Technology program offers state-of-the-art classroom and lab facilities. Students have the opportunity to work with CNC lathes, vertical machining centers with 4th axis rotary capabilities, as well as the only 4 axis horizontal machining center in use at a college in the state of California. The students also have access to coordinate measuring machines, inspection equipment, conventional machining equipment and two CAD/CAM programming labs. Manufacturing and CNC Technology offers an accelerated day program, designed for those who need to reenter the workforce quickly. Courses are also offered in the evening to accommodate incumbent workers. The program is also approved by the California Department of Apprenticeship Standards, which currently teaches apprenticeship classes for the International Association of Machinists and Aerospace Workers, Stanford Linear</p>	
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	<p>Accelerator (SLAC) and Stanford University. The DeAnza MCNC program also has the distinguished honor of being one of two college institutions in California having a “Haas Technical Education Center” accredited program, with the other being Cal-Poly SLO. The department coordinator sits on the board of the 2011-12 North American Haas Educational Council, representing 407 community colleges using over 2350 CNC machines in the USA. Starting in the fall of 2012, DeAnza will be the first community college in the United States to represent DMG/Mori Seiki as a “DMG Mori Seki University Educational Partnership Program”. The partnership will bring in over \$950,000 of 5 axis advanced manufacturing equipment, simulators and educational media. At this time, the only other DMG/Mori Seiki educational partners in the United States are UC Davis, UC Berkeley and Massachusetts Institute of Technology (MIT). To enhance this advanced technology, Siemens Corporation has granted 100 NX CAM software seats, valued at \$59,000 per seat (there are no student versions, only commercial seats available).</p> <p>DeAnza is also the only certified Mastercam CAD/CAM community college training provider in Northern California and is a member of the educational certification committee. The program maintains strong industry connections with equipment manufactures, software developers, and distributors who recognize the program as one of the elite in the country.</p> <p>The main strengths of the MCNC program are our close ties to industry, as well as ties to high school and</p>	
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	<p>four-year college programs. Major companies such as NASA, Grumman Marine Division, Loral Space Systems, Lockheed Space Systems, Apple Inc. as well as local manufacturing job shop facilities are closely involved in our advisory committee. These companies depend on the MCNC program to enhance the skills of their existing and future employees in high tech manufacturing. The program also has articulating agreements with the CCOC (Central County Occupational Center), Mt. Pleasant High School (pending) and the Industrial Technology program at San Jose State.</p> <p>Many students can gain employment by achieving a skills certificate, which is recommended by our advisory board and our most popular certificate.</p> <p>Unfortunately this certificate is not transcribed and does not show on many data sheets.</p> <p>With the partnership of DMG/Mori Seiki and the advanced manufacturing program implementation, the skills certificate will be changing to a Certificate of Achievement at the end of the 2012 year</p> <p><b>Skills Certificate (not transcribed) – CAD/CAM – Mastercam - 13.5 units</b></p> <p><b>Skills Certificate (not transcribed) – CNC Machine Operator - 13.5 units</b></p> <p><b>The following is the amount of skills certificate earned during the 2010-11 year.</b></p>	
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	<b>Skills Certificate</b>  <b>CNC Machine Operator - 52</b>  <b>CAD/CAM Mastercam – 13</b>	
What is the primary mission of your program?	CAREER / TECHNICAL	Basic Skills, Transfer. Career/Technical, Learning Resources/Academic Services, personal enrichment, N/A
Choose a secondary mission of your program.	TRANSFER	Basic Skills, Transfer. Career/Technical, Learning Resources/Academic Services, personal enrichment, N/A
Number of Certificates of Achievement Awarded	N/A	If applicable, enter the number of certificates of achievement awarded during the current academic year. Please refer to: <a href="http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm">http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm</a> leave blank if not applicable to your program
Number Certif of Achievement-Advanced awarded:	2	If applicable, enter the number of certificates of achievement awarded during the current academic year. Please refer to <a href="http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm">http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm</a> leave blank if not applicable to your program
Number AA and/or AS Degrees awarded:	5	If applicable, enter the number of certificates of achievement awarded during the current academic year. Please refer to <a href="http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm">http://research.fhda.edu/factbook/deanzadegrees/dadivisions.htm</a> leave blank if not applicable to your program
Academic Services and LR: # Faculty Served	N/A	Only for programs that serves staff or students in a capacity other than traditional instruction, e.g. tutorial support, service learning,etc. 0 = no change; (X)= decreased; X = increased; blank= not applicable to your program
Academic Services and LR: # Student Served	N/A	Only for programs that serves staff or students in a capacity other than traditional instruction, e.g. tutorial support, service learning,etc. 0 = no change; (X)= decreased; X = increased; blank= not applicable to your program
Academic Services and LR: # Staff Served	N/A	Only for programs that serves staff or students in a capacity other than traditional instruction, e.g. tutorial support ,service learning,etc. 0 = no change; (X)= decreased; X = increased; blank= not applicable to your program
# Faculty Employees	1	For ALL programs (Total FTEF that has changed this year, if the computer does not accept a decimal then please round up or down

		<p>to the nearest whole number). At this time only a numerical response will be accepted. (Program reviews 2008 - 2010 available at: <a href="http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm">http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm</a> AND program review 2010-11 <a href="http://www.deanza.edu/ir/program-review.html">http://www.deanza.edu/ir/program-review.html</a> )</p> <p>0 = no change; (X)= decreased; X = increased; blank= not applicable to your program</p>
# Student Employees	N/A	<p>For ALL programs. Total number that has changed this year. At this time only a numerical response will be accepted.</p> <p>0 = no change; (X)= decreased; X = increased; blank= not applicable to your program</p>
# Part-time Faculty Employees	1	<p>For ALL programs (Total PTFTEF that has changed this year, if the computer will not accept a decimal then please round up or down to the nearest whole number). At this time only a numerical response will be accepted. (Program reviews 2008 - 2010 available at: <a href="http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm">http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm</a> AND program review 2010-11 <a href="http://www.deanza.edu/ir/program-review.html">http://www.deanza.edu/ir/program-review.html</a> ) 0 = no change; (X)= decreased; X = increased; blank= not applicable to your program</p>
# Staff Employees	0	<p>For ALL programs. At this time only a numerical response will be accepted. ONLY report the number of staff that directly serve your program only, Deans will make a report regarding staff who serve multiple programs.</p> <p>0 = no change; (X)= decreased; X = increased; blank= not applicable to your program</p>
II.A-Growth and Decline of targeted student populations	<p>Due to budget constraints, the elimination of the Treasure Island and So. California MCNC Job Corps component (a very large off campus program) during 2007-2009 makes it possible to compare only 2009-10 to 2010-2011. The data from the April 2012 DeAnza College Program Review show a targeted population growth increase of 10% and our targeted population are more successful than our non-targeted populations (93% versus 92%)</p>	<p>Briefly, address student success data relative to your program Growth or decline in targeted populations (Latina/o, African Ancestry, Pacific Islander, Filipino) refer to the sites: (Program reviews 2008 - 2010 available at: <a href="http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm">http://research.fhda.edu/programreview/DAProgramReview/DeAnza_PR_Div_pdf/DeAnzaProgramReviewDiv.htm</a> AND program review 2010-11 <a href="http://www.deanza.edu/ir/program-review.html">http://www.deanza.edu/ir/program-review.html</a> )</p>
Trends in equity gap:	<p>Due to budget constraints, the elimination of the Treasure Island and So. California MCNC Job Corps component (a very large off campus program) during 2007-2009 makes it possible to compare only 2009-10 to 2010-2011. The data from the April</p>	<p>Refer to <a href="http://www.deanza.edu/president/EducationalMasterPlan2010-2015Final.pdf">http://www.deanza.edu/president/EducationalMasterPlan2010-2015Final.pdf</a>, p.16. Briefly address why this has occurred.</p>

	2012 DeAnza College Program Review showed the gap lowering by 10% in 2010-11.	
Closing the student equity gap:	The MCNC faculty will continue with the existing plan of actively providing counseling on course selection and scheduling to students, as well as increased exposure of the DeAnza manufacturing program. Recent progress speaking at career days and an articulation program with the CCOC and Mt. Pleasant H.S has opened up more career opportunities to underrepresented populations, which will help the department attain our goal of lowering the equity gap.	What progress or achievement has the program made relative to the plans stated in your program’s 2008 -09 Comprehensive Program Review, Section III.B, towards decreasing the student equity gap? See IPBT website for past program review documentation. If a rationale for your strategies was not stated in the 2008-2009 CPRU, then briefly explain now.
Overall growth/decline in # students:	The data from 2009-10 to 2010-11 shows no change in the overall enrollment. In order to increase enrollment we would have to increase the number of sections, which at this time is dependent on budget restrictions.	Briefly address the overall enrollment growth or decline of a comparison between all student populations and their success.
Changes imposed by internal/external regulations	None	Address program changes implemented as a response to changes in College/District policy, state laws, division/department/program level requirements or external agencies regulations? How did the change(s) affect your program? (e.g. any curriculum, program reorganization, staffing etc.)
Progress in “Main Areas of Improvement”	In 2008-09 internships and apprenticeships were an area we working to improve as we moved into the future. The department goal was to work as closely as possible with our advisory group members to create short term internships and longer term apprenticeship positions. This would allow the students to gain “real world” experience while attending MCNC classes. At that time the current economic condition did not allow these positions to become reality. But, with the manufacturing sector rebounding at a fast pace, the MCNC department has helped place 5 apprentices at Northrop Grumman, 4 interns at local shops,3 interns at NASA/Ames and 1 apprentice starting at SLAC end of spring. The MCNC department will continue to seek more partners and add to these numbers as the job market grows. Another main area for improvement was maintaining our computers and network system that allows us to teach at the highest level possible. With measure C funds, the replacement of new computers occurred in the lab beginning of 2012. This enabled the program to start working on growth and expansion of our CNC and CAD/CAM programs for fall of 2012.	Based on the 2008-09 Comprehensive Program Review, Section I.C. "Main Areas for Improvement", briefly address your program's progress in moving towards assessment or planning or current implementation of effective solutions.

<p>CTE Programs: Impact of External Trends:</p>	<p>Employment opportunities for Manufacturing and CNC Technology program graduates exist in large manufacturing facilities and small, independent design shops. Individuals with a background in manufacturing technology can also parlay their skills into other related positions in the industry: CAD/CAM programmers, PLC programmers, and tool makers.</p> <p>According to the California Employment Development Department's Labor Market Information data for the San Jose-Sunnyvale-Santa Clara MSA, there are projected to be 131 combined annual openings for the period 2006-2016 for individuals with this set of skills. The strongest demand will be for machinists with 57 annual openings and a steady growth rate of 6.1%. There will also be demand for computer-controlled machine tool operators with 45 annual openings and growth rate of 18.5%. There will be a limited demand for tool and die makers with only 2 annual openings.</p> <p>While the above is a sampling of the main career opportunities available, the MCNC program serves a variety of other careers. Over the years the program has provided Mechanical Engineers, Industrial Engineers, Program Managers, Manufacturing Planners and Purchasers with career advancing knowledge and skills. These jobs represent a significant number of current career positions, as well as job growth in the Bay Area.</p> <p>In addition to the San Jose-Sunnyvale-Santa Clara MSA, the Manufacturing and CNC program provides training to many other areas. DeAnza offers the only manufacturing and CNC program in the surrounding counties. As of 2011 DeAnza serves a vast area, such as Monterey, San Benito, Santa Cruz, San Mateo and San Francisco Counties where no existing Manufacturing and CNC programs exist.</p>	<p>Career Technical Education (CTE) programs, provide regional, state, and labor market data, employment statistics, please see "CTE Program Review Addenda" at: <a href="http://www.deanza.edu/gov/IPBT/resources.html">www.deanza.edu/gov/IPBT/resources.html</a> Identify any significant trends that may affect your program relative to: 1) Curriculum Content; 2) Future plans for your program e.g. enrollment management plans.</p>
<p>CTE Programs: Advisory</p>	<p>Developing an advanced manufacturing program to advance new</p>	<p>Career Technical Education (CTE), provide recommendations</p>



<p>Board Input:</p>	<p>and incumbent workers: As a recommendation of our advisory group, the MCNC department is in the beginning stages of developing an advanced manufacturing program with our industry partners. With the future addition of the DMG/Mori Seiki Educational Partnership and Siemens NX Cam software, the MCNC department is well on its way of having one of the most advanced manufacturing programs at a community college in the country. With continued support from companies such as HAAS Automation, Sandvick Coromat, Mastercam and Blasercut, the college continues to train at a high level using advanced technology equipment, such as touch probes, carbide tools, high speed machining, advanced cad-cam software and coolants. As supported by our advisory, the addition of this program will supply the labor market with higher skilled employees capable of selection, set-up and operation of advanced manufacturing equipment.</p>	<p>from this year's Advisory Board (or other groups outside of your program, etc.) Briefly, address any significant recommendations from the group. Describe your program's progress in moving towards assessment or planning or current implementation of effective solutions.</p>
<p>IV. A Budget Trends</p>	<p>Planning, implementation and assessment are major parts of training highly skilled students for the current workforce. When lack funds become an issue within the program, one or more of the areas will be affected. The result would be students finishing the program without the necessary skills to compete for high wage employment. Fortunately, there have been and continue to be generous external donations, which have allowed the department to implement "hands on" training and assess students needs to become extremely desirable employees.</p>	<p>Assess the impact of external or internal funding trends upon the program and/or its ability to serve its students. If you don't work with Budget, please ask your Division Dean to give you the information.</p>
<p>Enrollment Trends</p>	<p>The following are possible results to enrollment, students, the college and the community if the program funding was significantly reduced or eliminated:</p> <p>DeAnza is the only college in the area that has been approved to teach State apprenticeship courses. Loss: possible elimination of apprenticeship program to the student/employee as well as a qualified program to the community and loss of jobs.</p> <p>The MCNC program has relationships with major companies, such as Northrop Grumman, Tesla, and Loral as well as many small business owners (which include minority and women owners) in the Bay Area. The program trains new and existing students/employees in the manufacturing field. Loss: Lost career</p>	<p>Assess the impact of external or internal funding changes upon the program's enrollment and/or its ability to serve its students. If you don't work with Enrollment Trends, please ask your Division Dean to give you the information.</p>

	<p>opportunities to DeAnza college students as well as a loss to minority business owners in the local community.</p> <p>Haas Automation currently has donated over \$250 thousand dollars of equipment and scholarships to DeAnza College. Loss: Students, some already receiving financial aid, lose the opportunity to continue their education from the elimination of scholarships. DeAnza College would lose a community partner that has helped the college save thousands in new equipment through donations and entrustments.</p> <p>The list could go on and on. The bottom line is there would be limited opportunities for students, many in the targeted population we try so hard to help, to gain skills so they may become employable and contributing members of the community. It is our responsibility at DeAnza College to help all the students in the community, not just the students going to four year colleges. Although it is our department goal to help all students achieve their highest educational level, a vocational and employable skill is very important in the lives of many students.</p>	
<p>V. A -Faculty Position Needed</p>	<p>Growth</p>	<p>A drop down menu will allow you to choose: Replace due to Vacancy, Growth, No Faculty Needed</p>
<p>Staff Position Needed</p>	<p>None</p>	<p>A drop down menu will allow you to choose: Replace due to Vacancy, Growth, No Faculty Needed                  Only make request for staff if relevant to your department only. Division staff request should be in the Dean's summary.</p>
<p>Justification for Faculty/Staff Positions:</p>	<p>Advance Technology Manufacturing Program -Based on our advisory input, an additional full time instructor position would increase the level of instruction in currently developed high tech classes such as automated touch probes, carbide cutting tool technology, high speed machining and rapidly changing cad/cam software. Our SLO and assessment data has shown that our</p>	<p>Provide information such as: institutional, SLO, PLO data that supports the need for this replacement, what would be impact of not replacing this position, services lost if not replaced, include all assessment data that supports a need for growth, etc.</p>

	<p>program is achieving our goals training students to become desirable employees in the community. But, with the Mori Seki Educational Partnership coming in the Fall 12 quarter (Advanced Manufacturing), the need for new SLO and assessment work will increase dramatically. At this time full time FTEF is only 41%. An additional full time instructor would increase the overall quality, success rate and retention of the program. The obvious being more student opportunities to gain higher wage jobs.</p>	
Equipment Request	<p>All equipment has been requested submitted thru measure C phase 2 funding.</p> <p>Only other items needed are to re furnished existing items ( tables, chairs, computers etc)</p>	<p>A drop down menu will allow you to choose: Under \$1,000 or Over \$1,000 or no equipment requested. <b>At this time, the majority of your equipment requests have been submitted through Measure C processes. But, if you have items that cannot be covered through Measure C, please input your requests here.</b></p>
Equipment Title and Description, Quantity	<p>All equipment has been requested submitted thru measure C phase 2 funding.</p> <p>Only other items needed are to re furnished existing items ( tables, chairs, computers etc)</p>	<p>Description should identify if the item(s) are new or replacement(s), furniture/fixtures, instructional equipment, technology related, expected life of item, recommended warranties etc. Did this request emanate from a SLOAC or PLOAC process? <b>Does this item require new or renovated infrastructure (eg wireless access, hardwire access, electric, water or heat sources . . . )</b></p>
Equipment Justification	<p>All equipment has been requested submitted thru measure C phase 2 funding.</p> <p>Only other items needed are to re furnished existing items ( tables, chairs, computers etc)</p>	<p>Who will use this equipment? What would the impact be on the program with or without the equipment? What is the life expectancy of the current equipment? How does the request promote the college mission or strategic goals? Etc.</p>
Facility Request	<p>None as of this writing. The MCNC facility was renovated in 2004. With the donation of equipment in the future, need could change in the coming years.</p>	<p><b>Name type of facility or infrastructure items needed.</b> Renovation vs new. Identify associated structures needed to support the facility e.g. furniture, heat lamps, lighting, unique items above and beyond what is normally included in a similar facility</p>
Facility Justification	<p>None as of this writing. The MCNC facility was renovated in 2004. With the donation of equipment in the future, need could change in the coming years.</p>	<p>Who will use this facility? What would the impact be on the program with or without the facility? What is the life expectancy of the current facility? How does the request promote the college mission or strategic goals? Etc.</p>
B Budget Augmentation	<p>In our department funding is tied in to assessments. So much of our program is "hands on" work, which ties into "hands on" assessments. Funding pays for small equipment, supplies,</p>	<p>How much? <b>Who/what could be supported if this additional funding was awarded?</b> What would the impact be on the program with or without the funds? How does the request promote the</p>

	improved curriculum. The MCNC program excels in “real life” lab experience. More funding leads to higher skills, which leads to higher wage job opportunities. Out CTE goal is putting people to work.	college mission or strategic goals?  If you do not deal with the B budget directly, you can use the comment: “please refer to the Dean’s summary”.
Staff Development Needs	All instructors in the MCNC department use the staff development funds every year. These funds allow us to learn new assessment options. It may not be a specific assessment that leads us in this direction, but how we can we improve assessments to align the student’s needs to gain employment.	What assessment led to this request? What would the impact be on the program with or without the funds? How does the request promote the college mission or strategic goals?
SLOAC and PLOAC summary	The activities are essential in order to understand the long term benefits to our program. It is a never ending process to ensure you are teaching at the highest level. If you use this process to your advantage, you will graduate the most employable students in the community.	What did you learn from your SLOAC and PLOAC activities this year?
Future plans	Additional resources allow the program to make major improvements. You will the ability to reassess based on improved curriculum, advanced training equipment and additional instructor involvement.	How do you plan to reassess the outcomes of receiving each of the additional resources requested above?
Submitted by:	Mike Appio <a href="mailto:appiomike@deanza.edu">appiomike@deanza.edu</a> x8283	APRU writer’s name, email address, phone ext.