

# NORCO COLLEGE ANNUAL INSTRUCTIONAL PROGRAM REVIEW

## **Unit: Engineering**

*Please give the full title of the discipline or department. You may submit as a discipline or department as is easiest for your unit*

**Contact Person: Gerald Cordier and Carlos Garcia**

**Due in draft: March 15, 2015**

**Final drafts due: April 29, 2015**

Please send an electronic copy to the Vice President; Academic Affairs

Norco: [Diane.Dieckmeyer@norcollege.edu](mailto:Diane.Dieckmeyer@norcollege.edu)

If you are CTE: [Kevin.Fleming@norcollege.edu](mailto:Kevin.Fleming@norcollege.edu)



*Form Last Revised: December 2014*

**Norco College**

Web Resources: <http://www.rccd.edu/administration/educationalservices/ieffectiveness/Pages/ProgramReview.aspx>

# Annual Instructional Program Review Update

## Instructions

**\*Please retain this information for your discipline's/department's use (or forward to your chair).**

The Annual Self-Study is conducted by each unit on each college and consists of an analysis of changes within the unit as well as significant new resource needs for staff, resources, facilities, and equipment. It should be **submitted in draft every year by March 15th** (or the first working day following the 15<sup>th</sup>), with final drafts due on **April 29th**, in anticipation of budget planning for the fiscal year, which begins July 1 of the *following* calendar year.

**For Program Review data, please go to the following link:**

<http://www.norccollege.edu/about/president/strategic-planning/programreview/Pages/index.aspx>

The questions on the subsequent pages are intended to assist you in planning for your unit.

The forms that follow are separated into pages for ease of distribution to relevant subcommittees. **Please keep the pages separated** if possible (though part of the same electronic file), **with the headers as they appear**, and be sure to include your unit, contact person (this may change from topic to topic) and date on each page submitted. Don't let formatting concerns slow you down. If you have difficulty with formatting, Nicole C. Ramirez can adjust the document for you. Simply add responses to those questions that apply and forward the document to [nicole.ramirez@norccollege.edu](mailto:nicole.ramirez@norccollege.edu) with a request to format it appropriately.

If you cannot identify in which category your requests belong or if you have complex-funding requests please schedule an appointment with your college's Vice President for Business Services right away. They will assist you with estimating the cost of your requests. For simple requests such as the cost of a staff member, please e-mail your Vice President. It is vital to include cost estimates in your request forms. Each college uses its own prioritization system. Inquiries regarding that process should be directed to your Vice President.

**Norco: VP Business Services 951-372-7157**

## **Mission**

Norco College serves our students, our community, and its workforce by providing educational opportunities, celebrating diversity, and promoting collaboration. We encourage an inclusive, innovative approach to learning and the creative application of emerging technologies. We provide foundational skills and pathways to transfer, career and technical education, certificates and degrees.

## **Vision**

Norco – creating opportunities to transform our students and community for the dynamic challenges of tomorrow.

## **Goals and Strategies 2013-2018**

### **Goal 1: Increase Student Achievement and Success**

Objectives:

1. Improve transfer preparedness (completes 60 transferable units with a 2.0 GPA or higher).
2. Improve transfer rate by 10% over 5 years.
3. Increase the percentage of basic skills students who complete the basic skills pipeline by supporting the development of alternatives to traditional basic skills curriculum.
4. Improve persistence rates by 5% over 5 years (fall-spring; fall-fall).
5. Increase completion rate of degrees and certificates over 6 years.
6. Increase success and retention rates.
7. Increase percentage of students who complete 15 units, 30 units, 60 units.
8. Increase the percentage of students who begin addressing basic skills needs in their first year.
9. Decrease the success gap of students in online courses as compared to face-to-face instruction.
10. Increase course completion, certificate and degree completion, and transfer rates of underrepresented students.

## **Goal 2: Improve the Quality of Student Life**

### Objectives:

1. Increase student engagement (faculty and student interaction, active learning, student effort, support for learners).
2. Increase frequency of student participation in co-curricular activities.
3. Increase student satisfaction and importance ratings for student support services.
4. Increase the percentage of students who consider the college environment to be inclusive.
5. Decrease the percentage of students who experience unfair treatment based on diversity-related characteristics.
6. Increase current students' awareness about college resources dedicated to student success.

## **Goal 3: Increase Student Access**

### Objectives:

1. Increase percentage of students who declare an educational goal.
2. Increase percentage of new students who develop an educational plan.
3. Increase percentage of continuing students who develop an educational plan.
4. Ensure the distribution of our student population is reflective of the communities we serve.
5. Reduce scheduling conflicts that negatively impact student completion of degrees and programs.

## **Goal 4: Create Effective Community Partnerships**

### Objectives:

1. Increase the number of students who participate in summer bridge programs or boot camps.
2. Increase the number of industry partners who participate in industry advisory council activities.
3. Increase the number of dollars available through scholarships for Norco College students.
4. Increase institutional awareness of partnerships, internships, and job opportunities established with business and industry.
5. Continue the success of Kennedy Partnership (percent of students 2.5 GPA+, number of students in co-curricular activities, number of students who are able to access courses; number of college units taken).
6. Increase community partnerships.
7. Increase institutional awareness of community partnerships.
8. Increase external funding sources which support college programs and initiatives.

## **Goal 5: Strengthen Student Learning**

### Objectives:

1. 100% of units (disciplines, Student Support Service areas, administrative units) will conduct systematic program reviews.
2. Increase the percentage of student learning and service area outcomes assessments that utilize authentic methods.
3. Increase the percentage of programs that conduct program level outcomes assessment that closes the loop.
4. Increase assessment of student learning in online courses to ensure that it is consistent with student learning in face-to-face courses.
5. Increase the number of faculty development workshops focusing on pedagogy each academic year.

## **Goal 6: Demonstrate Effective Planning Processes**

### Objectives:

1. Increase the use of data to enhance effective enrollment management strategies.
2. Systematically assess the effectiveness of strategic planning committees and councils.
3. Ensure that resource allocation is tied to planning.
4. Institutionalize the current Technology Plan.
5. Revise the Facilities Master Plan.

## **Goal 7: Strengthen Our Commitment To Our Employees**

### Objectives:

1. Provide professional development activities for all employees.
2. Increase the percentage of employees who consider the college environment to be inclusive.
3. Decrease the percentage of employees who experience unfair treatment based on diversity-related characteristics.
4. Increase participation in events and celebrations related to inclusiveness.
5. Implement programs that support the safety, health, and wellness of our college community.

# I. Norco College Annual Instructional Program Review Update

Unit Engineering and Architecture  
Contact Person: Gerald Cordier or Carlos Garcia  
Date: 4/19/15

## Trends and Relevant Data

### 1. Have there been any changes in the status of your unit? (if not, please indicate with an “N/A”)

- a. Has your unit shifted departments?

N/A

- b. Have any new certificates or complete programs been created by your unit?

After much discussion with the Associated Students of Norco College and our strategic planning committee it was decided to discontinuing our Civil Engineering Technician certificate, Civil Engineering Technician AS degree, Engineering Technology certificate, and Engineering Technology AS degree. We will still continue to offer the Engineering Graphics certificate, Drafting Technology certificate/degree, and our Pre-Engineering AS degree. We also have a new certificate being added next year entitled 3D Mechanical Drafting. The Drafting Technology program is our strongest program and has the most relevant courses related to industry. This factor makes it our most popular program.

We are discontinuing our Architecture certificate/program for the same reasons as stated above. We will still continue to offer the Architecture Graphics certificate.

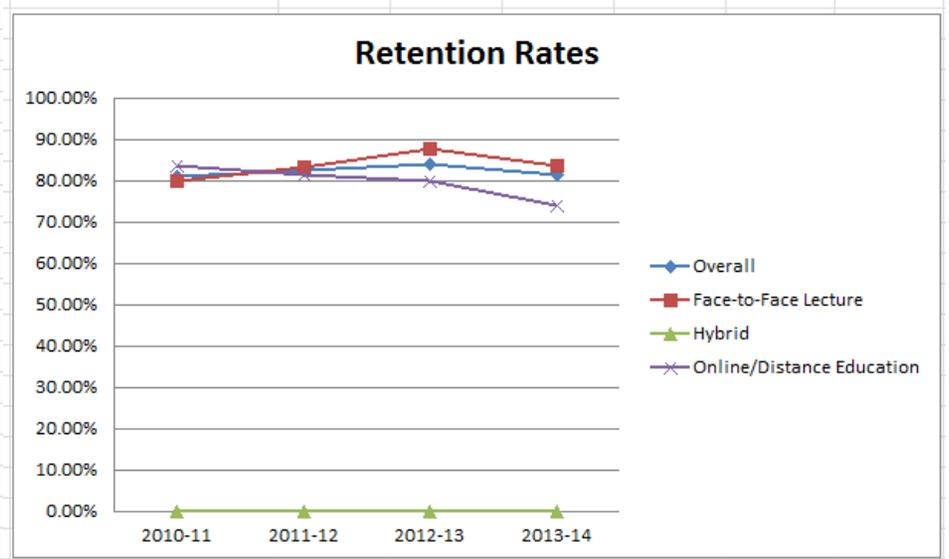
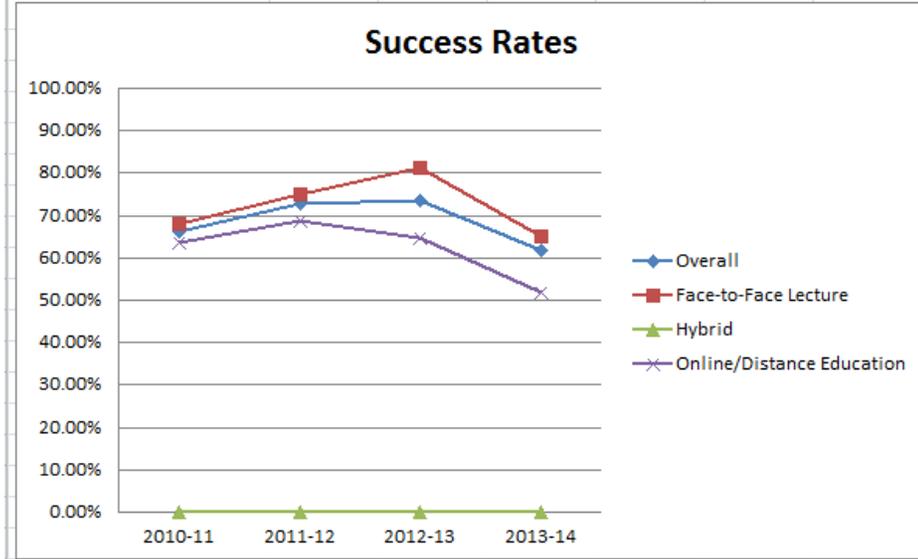
- c. Have activities in other units impacted your unit? For example, a new Multi Media Grant could cause greater demand for Art courses.

N/A

### 2. List your retention and success rates as well as your efficiency. Have there been any changes or significant trends in the data? If so, to what do you attribute these changes? Please list Distance Education, retention, success and efficiency separately.

Success Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	66.35%	72.77%	73.38%	61.68%
Face-to-Face Lecture	67.91%	75.00%	81.08%	65.00%
Hybrid	0.00%	0.00%	0.00%	0.00%
Online/Distance Education	63.51%	68.57%	64.62%	51.85%

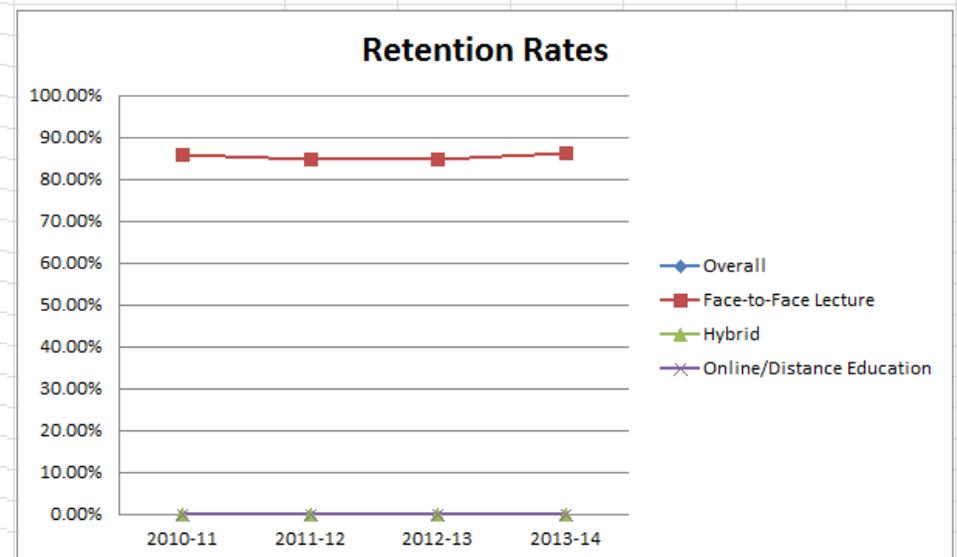
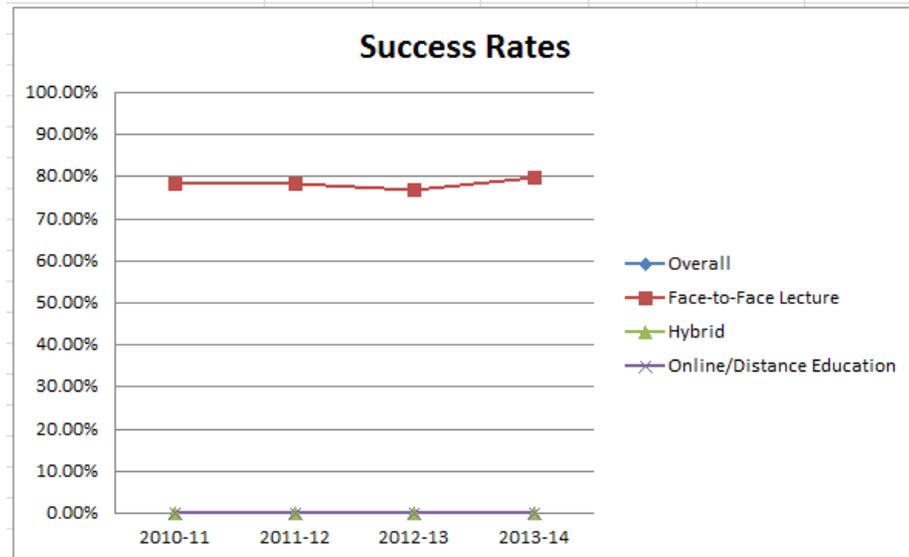
Retention Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	81.25%	82.67%	84.17%	81.31%
Face-to-Face Lecture	79.85%	83.33%	87.84%	83.75%
Hybrid	0.00%	0.00%	0.00%	0.00%
Online/Distance Education	83.78%	81.43%	80.00%	74.07%



The success rate for architecture of 2012-13 has dropped from 73.38% to 61.68%. I do not know the cause of this 11.68% drop at this time. However, the restructuring of our 27 unit Architectural certificate to a 9 unit Architectural Graphic certificate should help to reverse this downward trend. The retention rate for architecture of 2012-13 has dropped from 84.17% to 81.31%. Carlos feels that this decrease of 2.85% is due to an increase in students obtaining architectural drafting positions in industry. This is in line with the improving economy. The challenge will be in providing the needed training to students while they are gainfully employed.

Success Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	78.28%	78.44%	76.72%	79.90%
Face-to-Face Lecture	78.28%	78.44%	76.72%	79.90%
Hybrid	0.00%	0.00%	0.00%	0.00%
Online/Distance Education	0.00%	0.00%	0.00%	0.00%

Retention Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	85.79%	84.75%	84.85%	86.35%
Face-to-Face Lecture	85.79%	84.75%	84.85%	86.35%
Hybrid	0.00%	0.00%	0.00%	0.00%
Online/Distance Education	0.00%	0.00%	0.00%	0.00%



The success rate for engineering of 2012-13 has increased from 76.72% to 79.90%. There is a slight positive change of 3.18%. This is probably due to students finishing their certificate programs. The retention rate for engineering of 2012-13 has increased from 84.85% to 86.35%. There is a slight positive change of 3.18%. Because of the improvement of the economy, there has been an increase of students obtaining drafting positions in industry. Within the last two years, Carlos has been receiving more requests for students seeking CAD/Drafting positions in industry. If a student does obtain a position in industry, they usually drop their day classes to accommodate their new job.

**3. What annual goals does your unit have for 2014-2015 (please list the most important first)? Please indicate if a goal is directly linked to goals in your comprehensive. How do your goals support the college mission and the goals of the**

## Educational Master Plan?

List the goals of your unit for 2015-2016	List activity(s) linked to the goal	Relationship of goal to mission and master plan	Indicate if goal is limited to Distance Education
Discontinue our Civil Engineering Technician certificate, Civil Engineering Technician AS degree, Engineering Technology certificate, and Engineering Technology AS degree. We will still continue to offer the Engineering Graphics certificate, Drafting Technology certificate/degree, and our Pre-Engineering AS degree. This will simplify and streamline our course offering for students causing less confusion. We are also adding a 9 unit 3D Mechanical Drafting certificate.	<ol style="list-style-type: none"> <li>1. Dept. approval.</li> <li>2. Industry approval</li> <li>3. Curriculum approval</li> <li>4. The Associated Students of Norco College as well as a number of our strategic planning committees discussed the potential discontinuation of 11 Career &amp; Technical Education (CTE) certificate/degree programs.</li> </ol>	<p>Goal 1: 7. Increase percentage of students who complete 9 units, 26 units, and 60 units. By simplifying the certificates and updating them we hope to increase student completion rates.</p>	N/A
Increase the number of students passing the Certification SolidWorks Associate (CSWA) exam by 3%.	<p>Carlos have been reinforcing concepts and maneuvers, in SolidWorks, that are directly increasing the number of students passing the CSWA. There is no added cost to the school or students. SolidWorks Corporation provides free access to the CSWA for students. For nonstudents, the cost is \$100</p>	<p>Goal 1: 5. Increase completion rate of degrees and certificates over 6 years.</p>	N/A
Discontinue our 27 unit Architecture certificate/program while still continuing to offer the 9 unit Architecture Graphics certificate.	<ol style="list-style-type: none"> <li>1. Dept. approval.</li> <li>2. Industry approval</li> <li>3. Curriculum approval</li> </ol>	<p>Goal 1: 2.Improve transfer rate by 10% over 5 years We would like to increase the student's exposure to</p>	N/A

		architectural model building so they may build their portfolio and increase their chances of being accepted into the architectural program at CalPoly. The resources need to do this are outlined in Question 6.	

*\*Your unit may need assistance to reach its goals. Financial resources should be listed on the subsequent forms. In addition you may need help from other units or Administrators. Please list that on the appropriate form below, or on the form for "other needs."*

# Norco College Annual Instructional Program Review Update

Unit Engineering and Architecture  
 Contact Person: Gerald Cordier or Carlos Garcia  
 Date: 4/19/15

## Current Human Resource Status

4. Complete the Faculty and Staff Employment Grid below. Please list full and part time faculty numbers in separate rows. Please list classified staff who are full and part time separately:

Faculty Employed in the Unit			
Teaching Assignment (e.g. Math, English)	Full-time faculty or staff (give number)	Part-time faculty or staff (give number)	Distance Education
Engineering	2	3	
Architecture	0	2	

Classified Staff Employed in the Unit			
Staff Title	Full-time staff (give number)	Part-time staff (give number)	Distance Education

Unit Name: \_\_\_\_\_

**5. Staff Needs**

**NEW OR REPLACEMENT STAFF (Administrator, Faculty or Classified)<sup>1</sup>**

<p><b>List Staff Positions Needed for Academic Year _____</b>  <b>Please justify and explain each faculty request as they pertain to the goals listed in item #3. Place titles on list in order (rank) or importance.</b></p>	<p><b>Indicate (N) = New or (R) = Replacement</b></p>	<p><b>Annual TCP*</b></p>	<p><b>Distanced Education</b></p>
<p><b>1.</b>  <u>Reason:</u> Fulltime architectural faculty is needed to teach and manage the architectural program.</p>	<p><b>N</b></p>	<p><b>\$100,000</b></p>	<p><b>N/A</b></p>
<p><b>2.</b>  <u>Reason:</u></p>			
<p><b>3.</b>  <u>Reason:</u></p>			
<p><b>4.</b>  <u>Reason:</u></p>			
<p><b>5.</b>  <u>Reason:</u></p>			
<p><b>6.</b>  <u>Reason:</u></p>			

\* TCP = "Total Cost of Position" for one year is the cost of an average salary plus benefits for an individual. New positions (not replacement positions) also require space and equipment. Please speak with your college Business Officer to obtain accurate cost estimates. Please be sure to add related office space, equipment and other needs for new positions to the appropriate form and mention the link to the position. Please complete this form for "New" Classified Staff only. All replacement staff must be filled per Article I, Section C of the California School Employees Association (CSEA) contract.

Requests for staff and administrators will be sent to the [Business and Facilities Planning Council](#). Requests for faculty will be sent to the [Academic Planning Council](#).

<sup>1</sup> If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

Unit Name : \_\_\_\_\_

### 6. Equipment (including technology) Not Covered by Current Budget<sup>2</sup>

<b>List Equipment or Equipment Repair Needed for Academic Year _____</b> <b>Please list/summarize the needs of your unit on your college below. Please be as specific and as brief as possible. Place items on list in order (rank) or importance.</b>	<b>*Indicate whether Equipment is for (I) = Instructional or (N) = Non-Instructional purposes</b>	<b>Annual TCO*</b>				
		<b>Cost per item</b>	<b>Number Requested</b>	<b>Total Cost of Request</b>	<b>EMP GOALS</b>	<b>Distance Education</b>
<b>1. Whiteboards 4'x8'</b> <u>Reason:</u> When the projection screen is down it covers the whiteboard and there is no place to write. There is room for additional whiteboards.	I	\$310.00	2	\$620.00	Goal 1	N/A
<b>2. 37080 Hot Wire Cutter Thermocut</b> <u>Reason:</u> Architectural building material cutter for student projects	I	\$136.00	1	\$136.00	Goal 1	N/A
<b>3. 28080 Spare Cutting Wire for Thermocut</b> <u>Reason:</u> Material for wire for cutter	I	\$11.95	5	\$59.75	Goal 1	N/A
<b>4. Home Dust Mask 5/pack</b> <u>Reason:</u> Safety	I	\$4.49	30	\$134.70	Goal 1	N/A
<b>5. Hotwire Foam Factory Craft Scroll Table Kit</b> <u>Reason:</u> Foam cutter for student projects	I	\$59.95	5	\$299.75	Goal 1	N/A
<b>6. Hotwire Foam Factory Craft Sculpt Set</b> <u>Reason:</u> Foam sculptor for student projects	I	\$34.99	5	\$174.95	Goal 1	N/A
<b>7. Hotwire Foam Factory Crafters Knife Kit</b> <u>Reason:</u> Hand held foam cutter for student projects	I	\$34.99	2	\$69.98	Goal 1	N/A

<sup>2</sup> If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

<b>8. Chop &amp; Miter Saw KGS 80</b> <u>Reason:</u> Students will need to cut wood elements to a proper length and angle.	<b>I</b>	<b>\$203.2</b>	<b>3</b>	<b>\$609.60</b>	<b>Goal 1</b>	<b>N/A</b>
<b>9. 28732 Carbide Tipped Saw Blade for FKS/E, diam 3 9/64, 36 teeth</b> <u>Reason:</u> Saw Blade for Chop & Miter Saw KGS 80	<b>I</b>	<b>\$37.13</b>	<b>3</b>	<b>\$111.39</b>	<b>Goal 1</b>	<b>N/A</b>
<b>10. Proxxon Cut-Off Wheels, O 3 1/8" (80 Mm) For Kgs 80</b> <u>Reason:</u> Students will need to cut non-wood elements to a proper length and angle.	<b>I</b>	<b>\$4.19</b>	<b>1</b>	<b>\$4.19</b>	<b>Goal 1</b>	<b>N/A</b>
<b>11. Craftsman 10" bench drill press with laser</b> <u>Reason:</u> Students will need to drill holes normal to a surface	<b>I</b>	<b>\$119.99</b>	<b>1</b>	<b>\$119.99</b>	<b>Goal 1</b>	<b>N/A</b>
<b>12. Proxxon Machine Vise Model MS 4</b> <u>Reason:</u> Hold the work piece in place	<b>I</b>	<b>\$27.99</b>	<b>3</b>	<b>\$83.97</b>	<b>Goal 1</b>	<b>N/A</b>
<b>13. Proxxon 27100 Micro Compound Table - KT 70</b> <u>Reason:</u> For precise milling, boring, drilling or grinding operations as well as positioning.	<b>I</b>	<b>\$102.55</b>	<b>1</b>	<b>\$102.55</b>	<b>Goal 1</b>	<b>N/A</b>
<b>14. Proxxon Chuck For Drill Bits For TBM 115</b> <u>Reason:</u> Chuck for the bench drill press	<b>I</b>	<b>\$14.26</b>	<b>1</b>	<b>\$14.26</b>	<b>Goal 1</b>	<b>N/A</b>
<b>15. Step clamp set</b> <u>Reason:</u> Clamps for equipment mentioned above	<b>I</b>	<b>\$26.95</b>	<b>1</b>	<b>\$26.95</b>	<b>Goal 1</b>	<b>N/A</b>
<b>16. Blade for FKS/E, diam 3 9/64, 36 teeth</b> <u>Reason:</u> Replacement blade	<b>I</b>	<b>\$37.13</b>	<b>1</b>	<b>\$37.13</b>	<b>Goal 1</b>	<b>N/A</b>
<b>17. Carbide Tipped Saw Blade for FKS/E, diam 3 9/64, 12 teeth</b> <u>Reason:</u> Replacement blade	<b>I</b>	<b>\$27.00</b>	<b>1</b>	<b>\$27.00</b>	<b>Goal 1</b>	<b>N/A</b>
<b>18. Carbide Tipped Saw Blade for FKS/E, diam 3 9/64, 24 teeth</b> <u>Reason:</u> Replacement blade	<b>I</b>	<b>\$28.88</b>	<b>1</b>	<b>\$28.88</b>	<b>Goal 1</b>	<b>N/A</b>
<b>19. Diamond Coated Cutting Blade for FKS/E, diam 3 11/32</b> <u>Reason:</u> Replacement blade	<b>I</b>	<b>\$63.45</b>	<b>1</b>	<b>\$63.45</b>	<b>Goal 1</b>	<b>N/A</b>

20. Dado Head Set <u>Reason:</u> Replacement blade	I	\$64.45	1	\$64.45	Goal 1	N/A
21. Proxxon Crosscut Saw Blade Super-Cut For Fks/E, O 3 11/32" (85 Mm), 80 Teeth <u>Reason:</u> Replacement blade	I	\$20.25	1	\$20.25	Goal 1	N/A
22. Proxxon Table Saw FET <u>Reason:</u> Make large cuts accurately and quickly for student projects	I	\$335.95	1	\$335.95	Goal 1	N/A
23. Proxxon 37006 Bench Circular Saw KS 115 <u>Reason:</u> Make small cuts accurately and quickly for student projects	I	\$118.35	2	\$236.70	Goal 1	N/A
24. 38070-067 Replacement toothed belt for KS 115 <u>Reason:</u> Replacement toothed belt	I	\$10.75	2	\$21.50	Goal 1	N/A
25. Proxxon Carbide Tipped Blade For KS 115, O 2" <u>Reason:</u> Replacement belt	I	\$18.75	2	\$37.5	Goal 1	N/A
26. Proxxon Crosscut Blade Super-Cut, O 2 9/32" <u>Reason:</u> ; Replacement blade	I	\$15.38	1	\$15.38	Goal 1	N/A
27. Proxxon Diamond Blade For KS 115, O 2' <u>Reason:</u> ; Replacement blade	I	\$37.50	1	\$37.50	Goal 1	N/A
28. Proxxon Hss Saw Blade For KS 115, O 2' <u>Reason:</u> ; Replacement blade	I	\$10.48	1	\$10.48	Goal 1	N/A
29. Proxxon Tungsten Carbide Saw Blade, O 2" <u>Reason:</u> ; Replacement blade	I	\$44.95	1	\$44.95	Goal 1	N/A

\* Instructional Equipment is defined as equipment purchased for instructional activities involving presentation and/or hands-on experience to enhance student learning and skills development (i.e. desk for student or faculty use).

Non-Instructional Equipment is defined as tangible district property of a more or less permanent nature that cannot be easily lost, stolen or destroyed; but which replaces, modernizes, or expands an existing instructional program. Furniture and computer software, which is an integral and necessary component for the use of other specific instructional equipment, may be included (i.e. desk for office staff).

\*\* These requests are sent to the [Business and Facilities Planning Council](#).

Unit Name : \_\_\_\_\_

## 7. Professional or Organizational Development Needs Not Covered by Current Budget\*<sup>3</sup>

<b>List Professional Development Needs for Academic</b> <b>Year</b> _____ . Reasons might include in response to assessment findings or the need to update skills to comply with state, federal, professional organization requirements or the need to update skills/competencies. Please be as specific and as brief as possible. Some items may not have a cost per se, but reflect the need to spend current staff time differently. Place items on list in order (rank) or importance. Examples include local college workshops, state/national conferences.	<b>Annual TCO*</b>				
	<b>Cost per item</b>	<b>Number Requested</b>	<b>Total Cost of Request</b>	<b>EMP Goals</b>	<b>Distance Education</b>
<b>1.</b> Development funding for conference attendance at either Autodesk University or SolidWorks World. <u>Reason:</u> Update skills and experience new trends in engineering software and design applications.	<b>\$3,500</b>	<b>2</b>	<b>\$7,000</b>	<b>Goal 4</b>	<b>N/A</b>
<b>2.</b> <u>Reason:</u>					
<b>3.</b> <u>Reason:</u>					
<b>4.</b> <u>Reason:</u>					
<b>5.</b> <u>Reason:</u>					
<b>6.</b> <u>Reason:</u>					

\*It is recommended that you speak with the Faculty Development Coordinator to see if your request can be met with current budget.

\*\* These requests are sent to the [Professional Development Committee](#) for review.

<sup>3</sup> If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the “reason” section of this form.

Unit Name: Engineering and Architecture

**8. Student Support Services, Library, and Learning Resource Center** (see definition below\*) Services needed by your unit over and above what is currently provided by student services at your college. Requests for Books, Periodicals, DVDs, and Databases must include specific titles/authors/ISBNs when applicable. Do not include textbook requests. These needs will be communicated to Student Services at your college<sup>4</sup>

<p align="center"><b>List Student Support Services Needs for Academic Year</b> _____ Please list/summarize the needs of your unit on your college below. Please be as specific and as brief as possible. Not all needs will have a cost, but may require a reallocation of current staff time.</p>	<p align="center"><b>EMP GOALS</b></p>	<p align="center"><b>Distance Education</b></p>
<p><b>1. In-class assistance</b> <u>Reason:</u> The typical ratio, in our courses, of teacher to students is about 1 to 30. In our hands on lecture/lab classes, this leaves the most at-risk students vulnerable to falling behind. An in-class assistant is needed to assist the instructor in providing student support and to keep the students moving forward during demonstrations, and class activities</p>	<p align="center"><b>Goal 1</b></p>	<p align="center"><b>N/A</b></p>
<p><b>2.</b> <u>Reason:</u></p>		
<p><b>3.</b> <u>Reason:</u></p>		
<p><b>4.</b> <u>Reason:</u></p>		
<p><b>5.</b> <u>Reason:</u></p>		
<p><b>6.</b> <u>Reason:</u></p>		

\*Student Support Services include for example: tutoring, counseling, international students, EOPS, job placement, admissions and records, student assessment (placement), health services, student activities, college safety and police, food services, student financial aid, and matriculation.

<sup>4</sup> If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the “reason” section of this form.

\*\* These requests are sent to the [Student Services Planning Council](#) and the [Library Advisory Committee](#).

Unit Name: \_\_\_\_\_

**9. OTHER NEEDS AND LONG TERM SAFETY CONCERNS not covered by current budget<sup>5</sup>**

**\*\* For immediate hazards, contact your supervisor \*\***

<p><b>List Other Needs that do not fit elsewhere.</b> Please be as specific and as brief as possible. Not all needs will have a cost, but may require a reallocation of current staff time. Place items on list in order (rank) or importance.</p>	Annual TCO*				
	Cost per item	Number Requested	Total Cost of Request	EMP Goals	Distance Education
1. <u>Reason:</u>					
2. <u>Reason:</u>					
3. <u>Reason:</u>					
4. <u>Reason:</u>					
5. <u>Reason:</u>					
6. <u>Reason:</u>					

These requests are sent to the [Business and Facilities Planning Council](#), but are not ranked. They are further reviewed as funding becomes available.

<sup>5</sup> If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the “reason” section of this form.

2015

## Rubric for Annual Instructional Program Review - Part I only

Discipline:

Contact Person:

Reviewer:

Average Score:

Area of Assessment	<b>0 No attempt</b>	<b>1 some attempt</b>	<b>2 good attempt</b>	<b>3 outstanding attempt</b>
<b>1. Retention, success, and efficiency rates have been identified and reflected upon</b>	No attempt to list retention, success, or efficiency data	Limited attempt to identify or discuss identified data	Clear attempt to identify and discuss identified data	Substantial attempt to identify and discuss/interpret identified data
<b>2. There are annual goals for refining and improving program practices.</b>	No annual goals stated	Limited/generic statement made regarding goal(s), lacks clarity or details	Clear statement made regarding goal(s), includes details	Well-defined statement made regarding goal(s), includes details, reasoning
<b>3. Activities identified that support annual goals; connections made between goals/activities and Retention, Success, Enrollment, and Efficiency data</b>	No attempt made to identify activities	Limited/generic statement about activities; very limited attempt to connect to data from question 2 (where logical)	Clearly stated activities that support the goal(s); clear connection made to data from question 2 (where logical)	Well-defined activities that logically support the goal(s); definitive connections made to data from question 2 (where logical)
<b>4. The annual goals are linked to the Mission and Educational Master Plan (EMP) of NC.</b>	No link between the annual goals and the Mission or EMP	Limited attempt to link goals to Mission and EMP	Clear attempt to link goals to Mission and EMP	Well defined connection made between goals and Mission and EMP
<b>5. Resource requests have reasons identified and completed data fields, including estimated dollar amount.</b>	No reasons identified and incomplete data fields; or reasons identified, but incomplete or empty data field	Limited/generic/basic reasons provided, data fields completed	Clear requests for resources, all data fields fully completed	Well defined reasons for resources, all data fields fully completed
<b>6. Linkages made between EMP/Strategic Plan Goals (SPG) with reasons for resource requests</b>	No linkage made between resource requests and EMP/SPG	Limited/generic/basic connection made between resource requests and EMP/SPG	Clear connection made between resource requests and EMP/SPG	Strong connection made between resource requests and EMP/SPG
<b>7. The document is complete</b>	No; there are incomplete sections	/	/	Yes; all sections are completed
<b>Column scores</b>				

Additional comments:

## II. Norco College - Annual Assessment Update

**Purpose** – The purpose for completing an annual review is to provide an opportunity for reflection on all that has been accomplished and learned from your efforts in assessment. Assessments conducted in isolation from each other will yield interesting, important, or neutral information in and of themselves, but taking a holistic look back on the unit’s accomplishment over the past year might also yield some insight. The annual review is a time to take stock of which courses and programs have undergone some scrutiny, and subsequently should help with planning for the upcoming year. This planning might include considering which other courses are ready for an initial assessment, or which might need a loop-closing assessment. Things we might learn in one cycle of assessment might actually help us to plan assessments in the next cycle, or might facilitate changes in other courses that weren’t even included in the initial assessment. To this end, please complete the following with as much detail as possible. If you have any questions, please contact either Sarah Burnett at sarah.burnett@norcollege.edu, or Greg Aycock at greg.aycock@norcollege.edu.

1. Identify where you are in the cycle of SLO assessment for each course you assessed over the past year (*fall 2013 - spring 2014*). Each response will be individualized; this means each completed column might look a little different due to the nature of the cycle of assessment in which we engage. For example, you may have a course in which you are implementing improvements to close the loop on an initial assessment that was completed in a different year. You might also have a course that only has an initial assessment with report and you haven’t yet completed any follow-up or improvement activities. Below you will see an example of how to fill in this section, and then a blank chart for your own responses.

Course number and name	SLO <i>Initial Assessments</i> and completed <b>Reports</b> (State each SLO e.g., SLO 1)	SLOs with <i>Improvements identified</i> (Identify the SLO with # of improvements in ( ) e.g., SLO 1(1), or SLO 3(0) )	SLOs not needing improvement (assumed loop-closed), with clear reasoning as to why	SLOs involved in <i>Loop-Closing</i> assessment (state SLO and effect)
EAR 20 Child Development	SLO 1, SLO 3 (Indicates the discipline assessed and wrote a report for both SLO 1 and 3 in the past year for this course)	SLO 1(2) (Indicates 2 adjustments were made to the course e.g., in materials, assignment, test questions, pedagogy, curriculum etc. Notice, nothing is stated for SLO 3 – suggesting no concerns were identified...see the next column...)	SLO 3 – results meet discipline set standards of 75% success (If no improvement is needed please state why in this column)	SLO 1 – data indicate increased success after improvements were made (This means a closing the loop assessment was completed on SLO 2 for EAR 20)

Course number and name	SLO <i>Initial Assessments</i> and completed <b>Reports</b> (State each SLO e.g., SLO 1)	SLOs with <i>Improvements identified</i> (Identify the SLO with # of improvements e.g., SLO 1(1), or SLO 3(0) )	SLOs not needing improvement (assumed loop-closed), with clear reasoning as to why	SLOs involved in <i>Loop-Closing</i> assessment (state SLO and effect)
ENE 21	SLO 1 Apply the basic principles of mechanical drawing to the solution of various drawing problems.	SLO 1(3 improvements ) 1. 30 minutes per class for the first nine weeks of class was spent on using basic dimensioning based on manufacturing. Improvement: 70% in spring 2015 to 85% in fall 2014.  2. A short 5 to 10 minutes quiz was given during each class to help improve the written test. Improvement: 55% in spring 2015 to 70% in fall 2014.  3. The students sketch a section view of 5 deferent objects from home. More time was spent on broken-out views. Improvement: 79% in spring 2015 to 88% in fall 2014.	SLO 1-Results meet discipline set standards of 75% success.  Improvement: 68% in Spring 2015 to 81% in fall 2014.	SLO 1 – data indicate increased success after improvements were made  Even though I consider this SLO to be close as of fall 2014 we will still evaluate this SLO for ENE-21 each year. I feel this will help to keep continuity in this class and will help us continue to improve the percentage and determine if other changes need to be made.
ENE 22	SLO 2 Apply principles of mechanical drawing to the solution of various drawing problems.	SLO 2 (2 improvements) 1. For the first six weeks of class up to one hour per class session was spent on function. A short exercise dealing with function was given each week for the first six weeks. Improvement: 0% in spring 2015 to 75% in fall 2014.  2. For the first six weeks of class up to one hour per class session was spent on tolerancing. A short exercise dealing tolerancing was given each week for the first six weeks.	Results meet discipline set standards of 75% success.  Improvement: 0% in spring 2015 to 79% in fall 2014.	SLO 2 – data indicate increased success after improvements were made  Even though I consider this SLO to be close as of fall 2014 we will still evaluate this SLO for ENE-22 each year. I feel this will help to keep continuity in this class

		Improvement: 0% in spring 2015 to 83% in fall 2014.		and will help us continue to improve the percentage and determine if other changes need to be made.
ENE 30	<p>SLO 1 To learn the basic features of CAD as it applies to industry.</p> <p>SLO 2 The student will be able to draw and edit basic and advanced shapes.</p> <p>SLO 3 The student will be able to organize their drawing using layers and colors.</p> <p>SLO 4 The student will learn the basics of dimensioning including setting up dimension styles.</p>		<p>SLOs 1, 2, 3, and 4 Results meet discipline set standards of 75% success.</p> <p>SLO#1 was 85%</p> <p>SLO#2 was 95%</p> <p>SLO#3 was 100%</p> <p>SLO#4 was 76%.</p>	<p>The loop on SLOs 1, 2, 3, and 4 was closed in Spring 2014.</p> <p>Even though I consider these SLOs to be close as of Spring 2014 we will try to improve the percentage of SLO 4 (dimensioning and dimension styles) of ENE-30 this spring 2015.</p>
ENE 42B	<p>SLO 1 Use all menus and options of the CAD system needed to build basic and advanced solid models.</p> <p>SLO 2 Apply materials such as metals and plastics to solid models then load each model and analyze the resulting deformations and stresses.</p> <p>SLO 3</p>			We hope to be closing the loop on SLOs 1, 2, 3, and 4 this spring 2015 ENE 42B

	Build solid model assemblies and animate all moving parts with special attention to collision detection. SLO 4 Recognize defects and discontinuities on weldments, using non-destructive inspection processes.			

2. a) How many Program Level Outcome *initial* assessments were you involved in fall 2013 - spring 2014? Indicate a total number per column. Please provide copies of any reports or documents related to these assessments as attachments to this Annual Review, or embed at the end of the document as an **Appendix**.

We made initial assessments of our Engineering Technology certificate, Engineering Technician certificate and Architecture certificate. However we have discontinued our Civil Engineering Technician certificate, Civil Engineering Technician AS degree, Engineering Technology certificate, and Engineering Technology AS degree. We will still continue to offer the Engineering Graphics certificate, Drafting Technology certificate/degree, and our Pre-Engineering AS degree.

We have also discontinued our Architecture certificate/program. We will still continue to offer the Architecture Graphics certificate.

See Appendix for initial assessments of our Engineering Technology certificate, Engineering Technician certificate and Architecture certificate.

AOE (Area of Emphasis)	ADT (Associate for Transfer)	GE (General Education)	Certificate
0	0	0	3

- b) How many Program Level Outcome *loop-closing* assessments were you involved in fall 2013 - spring 2014? Indicate a total number per column. Please provide copies of any reports or documents related to these assessments as attachments to this Annual Review, or embed at the end of the document as an Appendix.

None at this time.

AOE (Area of Emphasis)	ADT (Associate for Transfer)	GE (General Education)	Certificate
0	0	0	0

3. Please describe any changes you made in a course or a program as a response to an assessment. Please indicate the impact the changes had on student learning, student engagement, and/or your teaching.

ENE-21

1. 30 minutes per class for the first nine weeks of class was spent on using basic dimensioning based on manufacturing. Improvement: 70% in spring 2015 to 85% in fall 2014.
2. A short 5 to 10 minutes quiz was given during each class to help improve the written test. Improvement: 55% in spring 2015 to 70% in fall 2014.
3. The students sketch a section view of 5 deferent objects from home. More time was spent on broken-out views. Improvement: 79% in spring 2015 to 88% in fall 2014.

ENE-22

1. For the first six weeks of class up to one hour per class session was spent on function. A short exercise dealing with function was given each week for the first six weeks. Improvement: 0% in spring 2015 to 75% in fall 2014.
2. For the first six weeks of class up to one hour per class session was spent on tolerancing. A short exercise dealing tolerancing was given each week for the first six weeks. Improvement: 0% in spring 2015 to 83% in fall 2014.

4. Can you identify any assessments that have prompted a change in perspective in the manner in which your discipline should modify the Course Outlines of Record (COR) or the Student Learning Outcomes (SLO)? Please expand on what you think should be modified.  
No change is needed.
5. Have you shared your assessments, outcomes, improvements etc. with your discipline? How? If not, how do you plan to do so in the future?

I will be meeting with the entire full time and part time faculty at the end of spring 2015 to discuss the assessments, outcomes and improvements.

Full time and part time faculty will be meeting twice an academic year, first at the beginning of fall then at the end spring.

6. Did any of your assessments indicate that your discipline or program needs additional resources to support student learning? If so, please explain.

None at this time.

7. What additional support, training, etc. do you need in the coming year regarding assessment?

None at this time.

## Appendix

Name of Program: \_\_ENGINEERING TECHNICIAN

Number of units \_\_27\_\_

Number of graduates in the program, 2012 \_\_\_\_\_

Lead Person \_\_Carlos Garcia

Semester/year \_\_Fall 2013

Program Curriculum Mapping (please attach a copy of your SLO-PLO matrix)

1. In examining your matrix, did you identify any gaps that might make it possible for a student to complete the program without having been exposed (or exposed sufficiently) to a particular PLO? If so, how might the program be modified to eliminate gaps and create better alignment between course SLOs and the PLOs?

No, it would be impossible to complete the program without being exposed to all the PLO's. With the exception ENE-21, every engineering course's SLO's maps to all the PLO's.

2. Does your list of PLOs require modification in any way, either by addition, subtraction, or alteration

in wording? If so, when do you expect to complete that modification?

At this time, we feel that our PLO's are sufficient and viable. We are aware that this is a technology program and changes may need to be implemented in the future. We are open to making changes to the existing PLO's if such changes are needed.

3. Should any courses be added or subtracted from the list of elective courses for the program? Should any particular courses be required or removed from required status? (Please explain.)

The Engineering Technician program is specifically designed for students, upon completion, to obtain employment in a civil engineering office or field support. The list of required courses prepares our students for a successful career as a civil engineering technician. At this time, we do not feel we need to implement any changes to the list of required courses.

Some changes need to be made to the list of elective courses. We would like to eliminate ENE-23, ENE-26, and ENE-31. ENE-23 has not been taught in at least ten years and there are no plans to bring it back into rotation. ENE-26 has never been taught to my knowledge. I would very much like to delete it from the program. ENE-31 has not been taught since the fall of 2010 and there are no plans to bring it back into rotation.

We would like to add one course to the list of electives and that would be CON-62. Construction 62 covers the Surveying Plan and the Site Plan as well as a complete set of construction drawings. I have taught this course many times in the past and I have always felt that this course would be an excellent supplement to those studying civil engineering technology. I possess a B. S. in civil engineering with course work in plane surveying. It would have been helpful to see how the surveying data was used in planning.

#### Program Assessment Report

1. Which PLO(s) did you assess?

PLO 2: An ability to apply the problem solving process to create and present design solutions.

2. What method(s) did you use to assess it/them? (Please provide a brief description and attach instruments, rubrics, etc. in the appendix).

Two part exam:

- a. Drawing project: The students had to create an engineering drawing that included dimensioning based on manufacturing and function.
- b. Written test: Questions relating to terminology.

Please see Appendix A

3. Who besides yourself was involved in this work (e.g., by providing sample student work, evaluating student work, assisting in the interpretation of data, etc.)? Describe and provide evidence for any

dialogue you had on assessment data and results.

Gerald Cordier and I collaborated in the interpretation of the data. We analyzed the data and soon became aware that there was a glaring deficiency in dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views. We meet several times before the exam and one time after the exam for three hours on Friday November the 22nd.

4. Provide a short summary/overview of the data you collected (attach any detailed data sets in the appendix, being careful not to include names of students). Were you generally satisfied with the results? Why or why not? If you assessed multiple PLOs, which one(s) did students do best and worst with?

The results, of the exam, were very revealing as to where the strengths and weaknesses of the students lie. Students performed very well in the use of dimensioning based on manufacturing, placement and choice of view, and identifying the types of conventional dimensions. The results show that the students had a good understanding of these concepts and no changes are planned for this part of the course.

Students performed below our expectations when it came to dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views. The results show that the students did not grasp these concepts and changes to the course need to be implemented to deal with these deficiencies.

5. Based on these results, what suggestions do you have for program improvement?

We plan to spend at least one hour per class session on function and tolerancing, with a short exercise, for the first six weeks to remedy the perceived issue. It should also be noted that this assessment was made at the midterm and not at the end of the course where students will be expected to have a better understanding of all the concepts covered.

6. What timeline do you propose for implementing changes in the program?

We plan to implement these proposed changes by the Spring 2014 semester. The changes are minor but we expect to improve student performance in the concepts of dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views.

Appendix A

Questions:

1. Dimensioning based on manufacturing. 9 of 10
2. Dimensioning based on function. 0 of 10
3. Dimensioning using standard dimensioning. 10 of 13
4. Dimensioning using GD&T (placement). 8 of 13
5. Dimensioning using GD&T (tolerancing). 0 of 13

Choice of View

6. Auxiliary. 13 of 13
7. Sectional. 6 of 13
8. Broken-out. 0 of 13
9. Placement of views. 13 of 13
10. Written test. Passed: 13 of 13

Name of Program:

Architecture  
Architecture Certificate

Number of units\_27

Number of graduates in the program, 2012\_\_\_\_\_

Lead Person Carlos Garcia/ Judy Jorgensen/ Gerald Cordier

Semester/year \_\_\_Fall 2013\_\_\_\_\_

Program Curriculum Mapping (please attach a copy of your SLO-PLO matrix)

1. In examining your matrix, did you identify any gaps that might make it possible for a student to complete the program without having been exposed (or exposed sufficiently) to a particular PLO? If so, how might the program be modified to eliminate gaps and create better alignment between course SLOs and the PLOs?

No, it would not be possible to complete the program without being exposed to all the PLO's.

ARCHITECTURE Program Learning Outcome

Proficiency sufficient to apply for and obtain entry-level employment in the field of architecture by completing the following:

- A set of residential working drawings including: first floor drawings, second floor drawings, foundation drawings, elevations, cross-sections, framing, electrical drawings and structural details
- Renderings, models
- BIM software (REVIT)

1. An ability to apply and integrate computer technology in the design process exhibiting skills necessary for entry-level employment in the architecture profession
2. Knowledge of architecture theory, and practice in the solution of Architectural design problems related to industry.
3. An ability to work effectively in small and large group situations similar to those found in industry.
4. The ability to apply the problem solving process to create and present design solutions.

2. Does your list of PLOs require modification in any way, either by addition, subtraction, or alteration in wording? If so, when do you expect to complete that modification?

At this time, the certificate is focused on entry level employment within an office the field of architecture. The program is currently not directed at transfer students intending to achieve an advanced degree in architecture and then pursue licensing. We feel that our PLO's are sufficient and viable for entry level employment. We are aware that this is a technology program and possesses greater opportunity for students considering

transfer and professional development. Changes may need to be implemented in the future. We are open to making changes to the existing PLO's if such changes are needed.

A recent meeting at California State University, Pomona indicated that there will be an emphasis on portfolios for student placement. A portfolio course and model building course should be further discussed and considered.

3. Should any courses be added or subtracted from the list of elective courses for the program? Should any particular courses be required or removed from required status? (Please explain.)

The Architecture program is specifically designed for students, upon completion, to obtain employment in an architecture office or related field. The list of required courses prepares our students for a successful entry level employee. At this time, we do not feel we need to implement any changes to the list of required courses.

Some changes recommend are to the list of elective courses. We would like to eliminate Architecture – Perspective Course. The perspective course has not been taught in at least five years and there are no plans to bring it back into rotation.

We would like to develop and add one course to the list of electives and that would be model construction for transfer students. A portfolio small unit repeatable course would greatly benefit students intending to seek employment or transfer to the currently impacted Architecture programs within the State of California State University system.

#### Program Assessment Report

1. Which PLO(s) did you assess?

PLO 4: The ability to apply the problem solving process to create and present design solutions.

PLO 3: An ability to work effectively in small and large group situations similar to those found in industry.

2. What method(s) did you use to assess it/them? (Please provide a brief description and attach instruments, rubrics, etc. in the appendix).

Rubric is attached.

Students are assigned a Shape Design Project following a specified set of criteria based and must develop a rich variety of original designs that clearly exhibit the various types of balance and are aesthetically pleasing. The students create a series of designs that develop through a series of stages including the understanding of the problem constraints, they evolve these through a problem solving process of divergent and convergent

decision making processes that involve generating and selecting the best designs that progressively to achieve the desired result. The desired result is 12 original designs that are aesthetically pleasing and clearly exhibit a rich variety with exhibit radial symmetry, linear symmetry and asymmetry.

3. Who besides yourself was involved in this work (e.g., by providing sample student work, evaluating student work, assisting in the interpretation of data, etc.)? Describe and provide evidence for any dialogue you had on assessment data and results.

Carlos Garcia, Gerald Cordier and I collaborated in the review of the assignment and the interpretation of the data. Students are introduced to the problem solving process as a lecture and class discussion topic prior to applying the process to their design process. Students have several progress checks and are directly observed as they progress through the convergent behaviors. Students generate 70 to 110 original designs as they progress through the process. The students submit a final design of 12 well drafted designs exhibiting the desired design qualities.

4. Provide a short summary/overview of the data you collected (attach any detailed data sets in the appendix, being careful not to include names of students). Were you generally satisfied with the results? Why or why not? If you assessed multiple PLOs, which one(s) did students do best and worst with?

The results, of the project, were very revealing as to where the strengths and weaknesses of the students lie. Students performed very well initially in the development of radial designs, produce a sufficient number of linear symmetrical designs and need to develop skills in the development of asymmetrical designs. This is revealed as they progress through the problem solving process and focus their efforts as they progress. The results show that the students developed a good understanding of the design principle of balance and the problem solving process and applying these concepts to generate a rich variety of solutions to a problem. No changes are planned for this part of the course.

5. Based on these results, what suggestions do you have for program improvement?

Based on a recent meeting at Cal Poly Pomona it would be desirable to have students also present their problem solving process in a graphic exhibit. We plan to add a final step of the assignment to include this aspect. Not just the presentation of the 12 designs. This would be a course level change. In addition there would be discussion of a course that would focus on the preparation of a portfolio that would include specific projects with the problem solving process documented and exhibited.

6. What timeline do you propose for implementing changes in the program?

We plan to implement the proposed course activity changes by the Spring 2014 semester. The changes are minor but we expect to improve student performance in the area of documenting the problem solving process to assist students in presenting their abilities for both employment and academic advancement applications.

Name of Program: \_\_ENGINEERING TECHNOLOGY

Number of units \_\_28\_\_

Number of graduates in the program, 2012 \_\_\_\_\_

Lead Person \_\_Gerald Cordier

Semester/year \_\_Fall 2013

Program Curriculum Mapping (please attach a copy of your SLO-PLO matrix)

1. In examining your matrix, did you identify any gaps that might make it possible for a student to complete the program without having been exposed (or exposed sufficiently) to a particular PLO? If so, how might the program be modified to eliminate gaps and create better alignment between course SLOs and the PLOs?

No, it would be impossible to complete the program without being exposed to all the PLO's.

2. Does your list of PLOs require modification in any way, either by addition, subtraction, or alteration in wording? If so, when do you expect to complete that modification?

At this time, we feel that our PLO's are sufficient and viable. We are aware that this is a technology program and changes may need to be implemented in the future. We are open to making changes to the existing PLO's if such changes are needed.

3. Should any courses be added or subtracted from the list of elective courses for the program? Should any particular courses be required or removed from required status? (Please explain.)

ENE-31 has been replaced with ENE-42 because most of the engineering companies are moving from 2d software to 3d parametric modeling software. This change was made to reflect the changes and trends in today's industry.

## Program Assessment Report

1. Which PLO(s) did you assess?

PLO 3: An ability to apply the problem solving process to create and present design solutions.

2. What method(s) did you use to assess it/them? (Please provide a brief description and attach instruments, rubrics, etc. in the appendix).

Two part exam:

- a. Drawing project: The students had to create an engineering drawing that included dimensioning based on manufacturing and function.
- b. Written test: Questions relating to terminology.

Please see Appendix A

3. Who besides yourself was involved in this work (e.g., by providing sample student work, evaluating student work, assisting in the interpretation of data, etc.)? Describe and provide evidence for any dialogue you had on assessment data and results.

Carlos Garcia and I collaborated in the interpretation of the data. We analyzed the data and soon became aware that there was a glaring deficiency in dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views. We meet several times before the exam and one time after the exam for three hours on Friday November the 22nd.

4. Provide a short summary/overview of the data you collected (attach any detailed data sets in the appendix, being careful not to include names of students). Were you generally satisfied with the results? Why or why not? If you assessed multiple PLOs, which one(s) did students do best and worst with?

The results, of the exam, were very revealing as to where the strengths and weaknesses of the students lie. Students performed very well in the use of dimensioning based on manufacturing, placement and choice of view, and identifying the types of conventional dimensions. The results show that the students had a good understanding of these concepts and no changes are planned for this part of the course.

Students performed below our expectations when it came to dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views. The results show that the students did not grasp these concepts and changes to the course need to be implemented to deal with these deficiencies.

5. Based on these results, what suggestions do you have for program improvement?

We plan to spend at least one hour per class session on function and tolerancing, with a short exercise, for the first six weeks to remedy the perceived issue. It should also be noted that this assessment was made at the midterm and not at the end of the course where students will be expected to have a better understanding of all the concepts covered.

6. What timeline do you propose for implementing changes in the program?

We plan to implement these proposed changes by the Spring 2014 semester. The changes are minor but we expect to improve student performance in the concepts of dimensioning based on function, dimensioning using GD&T tolerancing, and the use of broken-out views.

## Appendix A

### Questions:

1. Dimensioning based on manufacturing. 9 of 10
2. Dimensioning based on function. 0 of 10
3. Dimensioning using standard dimensioning. 10 of 13
4. Dimensioning using GD&T (placement). 8 of 13
5. Dimensioning using GD&T (tolerancing). 0 of 13

Choice of View

- 6. Auxiliary. 13 of 13
- 7. Sectional. 6 of 13
- 8. Broken-out. 0 of 13
- 9. Placement of views. 13 of 13
- 10. Written test. Passed: 13 of 13

**Scoring Rubric for Annual Program Review of Assessment (Part II only)**

**Assessment Unit Name:** \_\_\_\_\_ **Average score** \_\_\_\_\_

	0	1	2	3
<b>On-going SLO assessment and Loop-closing activity</b>	No evidence provided  0	Limited evidence of on-going SLO assessment (1 initial assessment, no loop-closing)  1	Clear evidence of on-going SLO assessment (at least 1 initial and or 1 loop-closing)  2	Clear and robust evidence provided of on-going SLO assessment (2 initial, and one loop-closing )  3
<b>Attempts to improve student learning</b>	No indication of any changes made to any courses, and no clarification provided  0	No indication of any changes made to any courses and limited clarification regarding discipline standards  1	Evidence of an attempt to implement a change in a course provided, or simple clarifying statement regarding why no specific improvement is needed  2	Multiple attempts made to implement changes to courses, discipline, institution, or state specific standards, or clear clarification why no improvement is needed  3
<b>Dialogue across the discipline</b>	No dialogue or attempt to communicate results	Limited demonstration of dialogue or communication	Clear demonstration of dialogue and sharing of	Robust and systematic dialogue and communication

	0	1 within the discipline or department	2 assessment within discipline or department	3 demonstrated within discipline
<b>Participation in PLO assessment (bonus points averaged into total score)</b>		Engagement in at least 1 initial PLO assessment <b>and/or</b> Engagement in at least 1 PLO closing-the-loop assessment fall '13-spr '14 1		