Program Review - Overall Report

Instructional: Electronics (ELE)

Data Review

2021 - 2024

Overall Trends

What overall trends do you see in success, retention, program of study, educational planning, and awards over the past 3 or more years?

Where the red bars are through the data, retention rates of white students in Electronics was almost 79% while retention of Hispanic students was 84% in 2018-2019; both dropped in 2019-2020 to 72% and 79% in 2019-2020. In both years, we had industry representatives and their head-hunters coming on campus and asking to speak with our classes. Southern California Gas company, Target, WalMart, Amazon, FedEx, UPS and AeroTek (head-hunters for Amazon and CMS) came into our Electronics classrooms and spoke to our students, offering them from $18 to $39 per hour, depending on where they placed in entrance testing. SoCal Gas Co. told my students that if they were even a little bit mechanically competent, with what they already learned at Norco College, their starting rate would be $29.10 per hour and would be trained the rest of the way by SoCal Gas. Many students got up and walked right out with the company rep and other never returned to class. The worst semester for corporate poaching of our students was 2020 where AeroTek recruiter said he wanted to hire 50 students that day and offered obscene amounts of pay. When students don't finish our program, companies that poach our students are killing the goose that lays the golden eggs. And even if they are realize that fact, their present needs out-weigh their future needs in a climate where companies cannot get enough workers with the types of knowledge areas we teach.

Enrollments have been way down since COVID isolation began, but even more so because companies are selling online an need delivery people more than ever, as well as factory workers who can keep electronics in smart machines running that enable supply chains to deliver to customers.

Lower and lower enrollments have become a lingering issue. A second major problem regarding beginning student populations in Electronics is that our counsellors seem to send anyone interested in Electronics to study to be an Electrician. So, many students are being sent to take courses to become Electricians rather than into Electronics where many of them more properly belong. I complained about this to Gail Zwart later to the head of Student Services to give to the head of Counselling when he returned--all this happened right before COVID hit. In that first visit, the head of counselling was out, so I left a DVD and weblinks to be given to him that explained what Electronics teaches and showed the difference between the two professions. I never heard back. But, then we all started working from home and focused on quickly retooling for online teaching, so my talk to the counsellors never happened.

Where the red bars are through the data for Success, both Whites and Hispanic students only demonstrated about 64% success. But it may be associated with the issues I raised regarding poaching of our students by industry because students who do not finish the course will not receive a passing grade. That goes for students who simply walk out of a class to follow the recruiter and never return, and who do not drop the course.

99.2% of SLOs have been assessed. ELE/ENE-27 is a cross-listed course that is only taught by Engineering faculty who should have provided SLO assessment data but did not, or we would have been at 100%. ELE-25 is only taught once in every two years. The last two times it was offered, it cancelled. We tried to contact the adjunct instructor who taught it six years ago, but he could not supply the data we needed for SLOs to be assessed in that course and was not interested in helping us reconstitute the data from his records.

Data Review

SLO-PLO Mapping is 82.7% with SLO/GELO mapping deficient primarily because these 400-series courses are taught at the IBEW Union Training Center where the instructors were in charge of collecting and assessing most of that data, but failed to submit the results even after our prompting.
Finally, Digital Electronics shows all green bars for SLO to PLO assessments.
After I retire this June, I hope my successor will be able to pick up the reigns and take action to reverse the lower than optimal retention and success numbers. I am afraid that the COVID-forced online teaching took every bit of my strength to keep my existing classes running well for the benefit of our students.

Disaggregated Student Subgroups

Look at the disaggregated student subgroups in success, retention, program of study, educational planning, and awards for your area. Are there any equity gaps that you will address in the next 3 years?
Of the courses outside of the IBEW Union 400-series courses (I did not check those boxes), the category of UNKNOWN at 66.7% in the 2017-2018 year is low compared to all the others. In 2018-2019, there was a rating of 50% retention of Female Whites and only 66.7% of Female Whites in 2019-2020. This occurred while I was actively involved in recruiting women into Electronics. Keep in mind that I also checked boxes for courses that are primarily taught in the ELC Electrician program here and are cross-listed in Electronics.

If there are any concerning trends over the past 3 or more years, or if equity gaps exist, what is your action plan to address them?
I hope my successor will continue to encourage, and recruit, women into Electronics. Apparently, people view Electricity and Electronics as the domain of men. But, there is no good reason why women cannot do the same high quality work as men and earn the same high living wages too. We also need to change the culture within the classroom to be more welcoming to women. We need to have pictures of successful women professionals in ads for our courses. I already started doing many of these things, including applying for, and receiving Perkins funds in the two previos years to recruit more women into Electronics.

Is there a resource request associated with this Data Review? (If yes, please complete a Resource Request, which you can access from the main menu to the left)
No

Assessment Review

2021 - 2024

Section 1: SLO Assessment Status (Based on Dashboard - Assessment Status)

Which Disciplines are included in this Assessment?
Electronics/Electrical

What percent of SLOs in the disciplines you identified above have been assessed?
All except ELE-27 which is not part of this discipline 99.3%

Which SLOs have not been assessed and why? Identify both the Course and the associated SLO(s).
ELE-027/ENE-27/DFT-27 SL03 has not been assessed. SL03 is a new SLO.

Section 2: Mapping Status (Based on Dashboard - Mapping Status)

Are all SLOs mapped to at least one PLO?
No

If all SLOs are not mapped to at least one PLOs, please explain why.
I am new to Norco College. I cannot explain why, but as I learn the process, I plan to begin mapping the SLOs to the PLOs.

Are the appropriate SLOs mapped to GELOs? (If you have a course that is listed in any general education area, it should have at least one SLO mapped to at least one GELO)
No

If the appropriate SLOs are not mapped to GELOs, please explain why.
The CTE electrical/electronics disciplines should not be aligned with GELO's. The disciplines are certificates with competency based assessments.

Section 3: PLO Analysis (Based on Dashboard - Analysis: PLO Direct Assessment)

Which Programs are included in this Assessment?
Electrician

Please identify the PLO(s) - and name the associated Program(s) - that achieved benchmarks.
All PLO's (1 through 6) achieved 100% Benchmark.

To what to you attribute this success?
During Covid, More equipment was purchased to accommodate each student with their own tools. During Covid year 2020, there was at least one class that had the lab component on campus. Having individual tools is a first at Norco College. No Sharing. This gave each student a chance for individual cumulative assessments.

Please identify the PLO(s) - and name the associated Program(s) - that did not achieve benchmarks.
All benchmarks were achieved

If there are PLOs that did not achieve benchmarks, what do you plan on doing to improve benchmark attainment?
Not applicable

Assessment Review

Section 4: Alignment to Career and Transfer

Describe the process used in this area to ensure programs (PLOs) align with career and transfer needs.
The PLOs are aligned with the intention of students gaining the proper skill sets that will make them valuable and marketable going into the electrical and electronics trades. The PLOs are shared with industry for feedback.

Describe the activities, projects, and opportunities this program offers to support experiential learning and alignment of programs to career and transfer (e.g. capstone projects, portfolios, service-learning opportunities).
The students' lab performances are documented in a portfolio to be used by the student for reference and well as having the portfolio to showcase their experiences in an interview setting.

Without looking at your current PLOs, describe some program outcomes which would best help your students continue on the path towards their workforce and transfer goals (e.g. subject matter expertise, hands on experience, partnerships, etc.).
Troubleshooting components is the most difficult to teach and the most valuable trait they can acquire. It takes time and knowledge of circuitry, components, and schematics. Troubleshooting is the most sought after skill that companies and industry want.

Review current PLOs. Do the outcomes listed above align with the current program outcomes?
Yes. The PLOs align with the current program outcomes. The electrical and electronics skill sets do not change very much. Also, it is an advantage to be able to reinforce the PLOs in different classes. Again, for example, troubleshooting different components are a part of most of the Electrical and Electronic Classes.

EMP GOAL 3. Close all student equity gaps.

GOALS AND ACTIVITIES

What are you doing now in support of this goal?
Closing the equity gap requires special attention. It requires close attention to students that need the special help which is hard to do with a full class of 27 students. What I am proposing is that during lab hours, when students have to individuallly demonstrate knowledge, skills, and manual dexterity, is the we increase the skills sets to include easier and difficult. Instead of having 1 lab for all skill levels, we can separate the labs into beging and advanced levels. One difficulty at Norco College is that an advanced class (like ELE-73 Motors and Transformers) has no pre-requisites. Therefore, students will take the class without any knowledge of the subject. The instructor is forced to provide a couple of weeks of training on the basics before talking about the course material.
The student, also, begins coursework in the electrical program without any prior knowledge of tools. Tools are introduced throughout the electrical program.

What are your plans/goals (3-year) regarding this goal?
The plan is to identify early in the semester those students that need additional help with all basics and create videos that can help them learn at an accelerated rate. Videos that address those students that are brand new to the electrical field will be created to slowly and methodically introduce any and all components of the electrical field, theory and practice. This will allow the student to continue learning at home by watching the appropriate videos. These videos can be used in multiple classes.

EVIDENCE

Do you have assessment data or other evidence that relates to this goal?
Currently there is no assessment data for areas that lack understanding, but there needs to be. Therefore, small benchmarks will be created to measure the students level of understanding in many areas. For example, does the student know how to use a multimeter efficiently and/or has the student mastered the use of a multimeter. It is not enough that a student "know" what a multimeter is. The student must have at least 80% mastery of the device. This is of utmost important in troubleshooting skills.

RESOURCES

Is there a resource request associated with this EMP Goal? (If yes, please complete a Resource Request, which you can access from the main menu to the left)
Yes

EMP GOAL 5. Reduce working poverty and the skills gap.

GOALS AND ACTIVITIES

What are you doing now in support of this goal?
The electrical Program at Norco College, I believe, is the strongest CTE program we have. This program provides the students with an array of hands on skills and knowlegde that is in demand everywhere. I am attending conferences, exporing new ideas, learning how to increase the number of ways that students can access the

course material. I enrolled (through Norco College) in the Chamber of Commerce for the cities of Norco, Corona, and Eastvale in order to meet and get closer to the companies that hire our students. I have recently been trained in the new Skills Boss Trainer which all the advanced manufacturing and logistics warehouses are using. Norco college is becoming a MSSC certification center for Supply Chain automation maintenance, technicians, and networking technicians.

What are your plans/goals (3-year) regarding this goal?
In order to effectively close the skills gap, Ineed to identify the areas of "gap" Attending conferences and talking to industry in the Inland Empire will give me immediately and first hand information on what the companies want in an employee.
I want to review the curriculum in all the 7 major courses in the Electrician Program to insure they provide the necessary skills to fill that "gap".

EVIDENCE

Do you have assessment data or other evidence that relates to this goal?
I do not have any data that relates to this goal.

RESOURCES

Is there a resource request associated with this EMP Goal? (If yes, please complete a Resource Request, which you can access from the main menu to the left)
Yes

EMP GOAL 7. Become the regional college of choice by offering a comprehensive range of programs that prepare students for the future and meet employer workforce needs.

GOALS AND ACTIVITIES

What are you doing now in support of this goal?
The Electrical program is currently a popular program that leads to many jobs. We want to make sure that we are meeting industry needs and enhancing the areas of importance. We are doing this by talking to industry and asking what are the important resources that they are looking for and are they successful. During this dialog, it was determined that not enough trouble-shooting skills were demonstrated by their new employees. The hands on skills that will improve this area is reading schematics, being an expert in using the Digital multimeter, and as much hands on practice in trouble shooting many different types of components.

What are your plans/goals (3-year) regarding this goal?
The plan regarding this goal is to give the students activities that will give them the trouble shooting skills that are needed in the workforce. As this is practiced in class, the students are demonstrating a need for more hands on learning of the DMM, reading schematics and trouble shooting skills and methods.

EVIDENCE

Do you have assessment data or other evidence that relates to this goal?
Yes, but the only evidence is the in class formative assessments that is observed during class.

Program Review: Part 1

RESOURCES

Is there a resource request associated with this EMP Goal? (If yes, please complete a Resource Request, which you can access from the main menu to the left)
Yes

Program Review Part 2

2021 - 2024

Curriculum

Are all your courses current (within four years)?
Yes

What percentage of your courses are out of date?
0%

If you have courses that are not current, are they in the curriculum process?
N/A

For out of date courses that are not already in progress of updating, what is your plan?
All the courses are up to date.

Do you have proposals in progress for all the DE courses you intend to file?
No

Do you require help to get your courses up to date?
Yes

Program Review Reflections

What would make program review meaningful and relevant for your unit?
The electrical program at Norco College is a needed pathway for gainful employment in many areas of electrical, not only electricians. A simple search on line with Indeed.com typing electrician will bring many local opportunities for our student graduates. It is extremely important that we give our students the knowledge and training they need to be competitive. Unfortunately, CTE programs require a lot of costly equipment. During many of our labs, students would be in groups of 5 while attempting to learn a skill. This is not learning, but watching (which can be done on youtube). If each student had their own equipment to work on, the all the students could learn. During Covid, many tools were purchased and now some of our programs can supply students with individual tool kits.

What questions do we need to ask to understand your program plans, goals, needs?
The best question would be by the employer of our student graduate. Did we train the student to your satisfaction. Is the student able to perform and learn at the new job.
Another question would be to the student/graduate after the student finds a job in the appropriate field. Did Norco College give you the proper training for you to function as a learned student?
Is the electrian program lacking in anyway?
What percent of our student graduates getting a job in the electrical field?
Another question would be if a student of Norco College gets a job in this field, is he/she still working in the field after 5 years?

What types of data do you need to support your program plans, goals, needs?
The most important data would be the percent of graduates of the electrical program getting jobs in the electrical field.

Program Review Part 2

If there are any supporting documents you would like to attach, please attach them here.

Resource Requests

2021 - 2024

What resources do we already have?
For the ELE-73 and ELE-74 we currently have 5 trainers and some motor controller units with motors. Also, we have existing student trainers for Digital Electronics courses, but many need parts replaced where students have damaged them. Many of our subsystems and components are used up each semester in each Electronics course and require replenishment.

What resources do you need?
3 more trainers, reversing relay contactors (30). This will be 90 times cheaper than trainers for all students. Also, Transformers (30) and other peripherals to support the courses. Electronics also needs annual replenishment supplies for our student lab kits and replenishment of used stock from out inventory, in addition to the additional trainers needed for ELE-73 and ELE-74, to cover all other ELE courses ($18,240) which also meets the EMP Goals mentioned and especially #7. One gripe I have is that I told the people at the Nuventive training that ELE and ELC should be split into two entirely separate programs in Program Review. My suggestion was acknowledged; yet that never happened apparently because my ELC colleague said he was forced to do his Comprehensive Program Review in concert with me, through this ELE PR rather than through his own ELC discipline.

Request related to EMP goal or Assessment?
EMP Goal 7,EMP Goal 3,EMP Goal 5

$ Amount Requested
158,240

Resource Type
ITEM: Equipment, Technology, Services, Software, Furniture

Potential Funding Source(s)
CTE: Strong Workforce Project (SWP),CTE: Perkins (VTEA),Other/None

The evidence to support this request can be found in:
Assessment Review,Program Review: Part 1,Program Review: Part 2

This request for my area is Priority #:
1

Submission

2021 - 2024

All parts of my Program Review have been completed and it is ready for review
Yes