INSTRUCTIONAL COMPREHENSIVE PROGRAM PLANNING AND REVIEW (CPPR) For 2022

Only to be completed by those programs scheduled for the year according to the institutional comprehensive planning cycle for instructional programs (i.e., every four years for CTE programs and five years for all other instructional programs), which is produced by the Office of Instruction. Faculty should meet with their dean prior to beginning this process. Training is available to support faculty completing this work.

Cluster: WORKFORCE DEVELOPMENT   **Program: Electronic & Electrical Technology (EET)**
Current Academic Year: 2022 - 2023

Last Academic Year CPPR Completed: 2018   **Current Date:** 2-2022

NARRATIVE: Instructional CPPR

Please use the following narrative outline:

   A.   GENERAL PROGRAM INFORMATION

Program Mission (optional)

> The Electronic and Electrical Technology (EET) program is fully certified by the California Division of Labor Enforcement (Electrician Certification Unit, Program # 147) and offers the state General Electrician curriculum for Residential, Commercial and Industrial Electrician Trainees. The EET department is dedicated to support all interested students in achieving their Electrical and Electronic Technology educational and career goals and assist with full-time or temporary job placement while pursuing their academic training in the evenings to accommodate working students. While maintaining student confidentiality we also seek to assist our students in areas of personal growth and soft skills.

> Faculty proactively assist students with preparation for job interviews, emphasize teamwork, and the importance of "no compromise with safety in electrical systems". This is largely accomplished with role-playing scenarios and through Industry guest speakers.

Brief history of the program

> Pre 2000 the program was named "Electronics". Up through that time period the program offered fundamental courses in addition to a wide variety of more specialized courses focusing on robotics, computer numerical control (CNC), alarm systems, etc. Due to the lack of wide employment opportunities related

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to the specialty courses the program shifted to focusing on the electrical contracting and electric utility industries (in addition to related industries). During 2003 the design, construction, and commissioning of our polyphase power electronics laboratory in room 4501D was complete. As a result, our partnership with electrical contractors, the electric utility industry, manufacturing industry, and other electrical/electronic industries was significantly enhanced.

Subsequently, legislation was passed which modified the California labor code and required all non-union electrical (C-10) contractors to only hire existing journey level electricians (or) individuals who were enrolled in a state DLE certified program that had been approved to offer very specific curriculum analogous to the International Brotherhood of Electrical Workers (IBEW, Electrical Union)) apprenticeship program.

After an extensive state audit, the EET Department was certified to offer the highest level of electrician curriculum (i.e., the CA Whole General Electrician Certification covering residential, commercial, and industrial Electrician Trainees). Since our initial audit over 10 years ago the EET Department has continually complied with yearly reviews and maintained our state certification to offer the Whole General Electrician Curriculum.

State Website Listing (screen shot):

147 Cuesta College - Open to the public

Approved to Offer Whole General Electrician Curriculum

San Luis Obispo County

P.O. Box 8106

San Luis Obispo, CA 93403

Phone (805) 546-3264

Fax (805) 546-3963

Contacts: John Cascamo (Administrator), john_cascamo@cuesta.edu

Bret Allen (Technical), ballen@cuesta.edu

Website: www.cuesta.edu

Prior to the previous program review the Electronics and Electrical Technology (EET) program has undergone several changes and improvements. These modifications were necessary to meet the needs of new, re-entry, and continuing education students at Cuesta in the EET department.

Prior to 2013 the Certificate of Achievement (CA) in "Electronics and State Electrician" required students to complete approximately 1280 hours. Several courses were deactivated and a new course (EET-119, State Electrician Trainee Topics) which was piloted as a 2-unit survey course then changed to a 4-unit course due to the number of core competencies mandated in the crosswalk/contractual agreement by and between the Division of Labor Enforcement (DLE), Electrician Certification Unit, and Cuesta's EET Department.

Additionally, the AS in Electrical Technology was historically a single-track degree. During the previous cycle the AS in Electrical Technology was modified to a 2-track degree pattern. Track 1 was designed to prepare students for various employment and/or transfer opportunities in electrical technology; track 2 was designed to prepare students for various employment and/or transfer opportunities in nuclear technology.

Over the 2020 – 2021 Academic year the nuclear track (track 2) was deactivated and removed from the 2022 -2023 Cuesta catalog. This was primarily because the Diablo Canyon Nuclear Power Plant (PG&E) discontinued funding for the training of Nuclear Maintenance Technicians due to changes in their future decommissioning plan.

The nuclear maintenance option never offered a dedicated Associate of Science degree pattern however did offer a Certificate of Achievement which has also been deactivated and removed from the 2022 -2023 Cuesta catalog. The only impacts on enrollments have been associated with the deactivated nuclear courses under the EET department.

Include significant changes/improvements since the last Program Review

The Associate of Science (A.S.) in Electrical Technology was changed from a dual (Electrical / Nuclear) track to a Single-track Electrical Technology A.S. degree. The Nuclear Track as well as the Nuclear Energy Systems Certificate of Specialization (C.S.) were deactivated in CurricuNET and approved by the Curriculum Committee. Both degree patterns are depicted below for comparison purposes. This was due to Pacific Gas and Electric's (PG&E) discontinued funding for the training of Nuclear Maintenance Technicians due to changes in their future decommissioning plan however, they continue to operate the Diablo Canyon Nuclear Power Plant (DCPP) and hire both EET graduates and Certificated Electrician Trainees from the EET Department.

During the last program cycle the following EET courses:

- State Electrician Trainee Topics (EET-119), and

- Computer Instrumentation and Control

were added to the Electrical Technology A.S. with the approval of the Curriculum Committee and are now also depicted in the 2022 -2023 Cuesta catalog. These additions were at the request of local industry, students, counselors, and district administrators.

Additional options for mathematics substitutions were also included in the Electrical Technology A.S. and Certificates of Achievement (C.A.) in order to accommodate students with us a variety of mathematics backgrounds (including minority and DSPS students) while maintaining the integrity of the state crosswalk and mathematics requirements for successful completion of the EET A.S. and /or CA's.

Strong workforce funds were and continue to be used to purchase highly needed electrical / electronic instrumentation, residential, commercial, and industrial wiring trainers and associated equipment to allow EET students the experience of designing, planning, wiring, commissioning, and troubleshooting small scale electrical infrastructures. Additionally, forward-looking infrared (FLIR) cameras were purchased to instruct students on electrical safety, preventative maintenance, and troubleshooting of both benchtop trainers as well as the infrastructure and equipment in the power electronics laboratory. The foregoing equipment has been instrumental in exposing EET students to hands-on / real world electrical systems and electronic controls in much shorter time frames.

Additionally, strong workforce funds have been instrumental in purchasing a light board system which allows instructors to present lesson plans and hardware experiments on a glass canvas while being recorded buy a camera mounted to a tripod on the opposite side of the glass canvas then saving the recording to a flash drive and subsequently uploading continent to the Canvas LMS for students to view online asynchronously. The light board system also supports online synchronous teaching and meetings with the state-of-the-art technology. The light board system was acquired in late 2021 and a permanent studio is currently being configured to allow for necessary noise attenuation, lighting, and space. The system allows faculty to face the camera as they are writing and annotating on the glass canvas. This better allows faculty to use body language and hand gestures rather than writing on a whiteboard with their back facing the camera.

Example of Light Board Recording (screen shot)
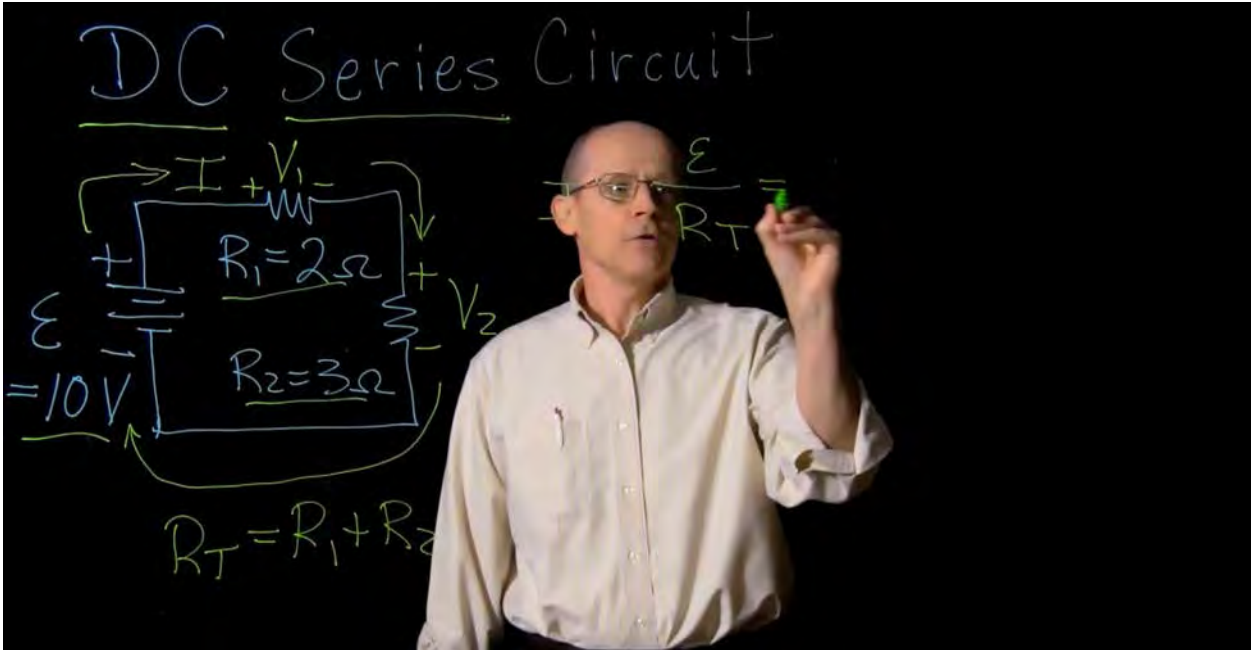
Moving into the next cycle additional support from facilities and other campus support staff is necessary to fully implement the capabilities of the light board system which is operational but not optimal at the time of this CPPR submission.

- See the following 2-pages for improvements to program from 2022-2023 catalog -

ELECTRONICS AND ELECTRICAL TECHNOLOGY

ASSOCIATE DEGREE & CERTIFICATE PROGRAMS   **2022–2023 CATALOG**

DESCRIPTION

Cuesta College is an approved training provider as a general electrician certification training program. Students enrolled in an approved course may register with the Division of Apprenticeship Standards to be eligible to work as an electrician trainee and continue their employment if 150 classroom hours each year are completed until qualified for the certification exam. Students who complete all the mandatory courses are eligible to sit for the certification exam administered by the state of California. Passage of this exam in combination of specific work experience will complete the state electrician certification process.

There is additional paperwork required for the State Electrician Trainee Program. Please contact the Engineering Technology Department for more information at (805) 546-3264.

ASSOCIATE DEGREE AND CERTIFICATE PROGRAMS

An Associate Degree, depending on the focus of study, is designed to prepare students for transfer into upper division course work in a bachelor's degree program, or, to prepare students to enter the workforce in a particular vocational field. To qualify for an Associate's Degree, a student must: (1) complete each major-specific course required for the degree with at least a "C" grade or better, (2) complete all Cuesta College general education, graduation and residency requirements, and (3) achieve an overall grade point average of 2.0 for all courses attempted (major, general education, elective).

A Certificate Program is designed for students who desire specific training to meet an immediate occupational or personal goal, or for promotion or lateral transfer within their existing field of employment. To qualify for a Certificate of Achievement or a Certificate of Specialization, a student must 1) complete all courses required for the Certificate with an overall grade point average of 2.0.

DEGREES, CERTIFICATES & AWARDS

- Associate in Science (A.S.)
- Certificate of Achievement (C.A.)
- Certificate of Specialization (C.S.)

CAREER OPPORTUNITIES

- Commercial Electrical Installer
- Electrical Engineer
- Electrical Installer
- Electrical Maintenance Technician
- Electrician
- Environmental Engineer
- Environmental Scientist
- Industrial Maintenance Electrician
- Solar Engineer

CONTACT

Division Chair: **John Stokes**
Division Assistant: **Tiffanie Kerr**
Office: **Bldg 4300, Rm 4301**
Phone: (805) 546-3264
Fax: (805) 546-3963
Email: **tiffanie_kerr@cuesta.edu**

ASSOCIATE DEGREE PROGRAM

Electrical Technology — Associate in Science

Required Courses (39 credits)

CTCH 163	Construction Management	3
EET 119	State Electrician Trainee Topics	4
EET 169	Residential Wiring	3
EET 181	National Electrical Code	3
EET 183	Commercial And Industrial Wiring	4
EET 213	Electronics Fundamentals	6
EET 224	Industrial Electronics	4
EET 228	PLC Automation And Solar Monitoring	4
EET 257	Computer Instrumentation And Control	4
EET 267	Power Systems And Rotating Electrical Machinery	4

Advising Note: To satisfy the Math/Analytical Thinking requirement for the General Education portion of this degree, students should choose from among Math 127, 229, 231, 242, or 265A.

Total Credits: 39

Click Here For Program Student Learning Outcomes

CERTIFICATE PROGRAMS

Electronics and State Electrician — Certificate of Achievement

Required Courses (40 credits)

CTCH 163	Construction Management	3
EET 119	State Electrician Trainee Topics	4
EET 169	Residential Wiring	3
EET 181	National Electrical Code	3
EET 183	Commercial And Industrial Wiring	4
EET 213	Electronics Fundamentals	6
EET 224	Industrial Electronics	4
EET 228	PLC Automation And Solar Monitoring	4
EET 267	Power Systems And Rotating Electrical Machinery	4
MATH 127	Intermediate Algebra	5

Advising Note: Math 229, 231, 242 or 265A can be substituted for Math 127

Total Credits: 40

Click Here For Program Student Learning Outcomes

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree may differ from those needed to prepare to transfer. Students who plan to transfer to a four-year college or university should schedule an appointment with a Cuesta College counselor to develop a student education plan (SEP) before beginning their program.

TRANSFER RESOURCES:

CSU and UC Articulation Agreements and Majors Search Engine:
www.ASSIST.org
CSU System Information:
www2.calstate.edu

FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that Cuesta College offers a full array of financial aid programs—grants, work study, scholarships, federal loan programs, and fee waivers. These programs are available to both full-and part-time students who are seeking a degree or certificate. For those who qualify, financial aid is available to help with tuition, fees, books and supplies, food, housing, transportation, and childcare. Please log onto our website for additional information:
www.cuesta.edu/student/studentservices/finaid

Power and Instrumentation Certificate — Certificate of Achievement

Required Courses (16 credits)

EET 227	Fluid And Pneumatic Technology	4
EET 228	PLC Automation And Solar Monitoring	4
EET 257	Computer Instrumentation And Control	4
EET 267	Power Systems And Rotating Electrical Machinery	4

Total Credits: 16

Click Here For Program Student Learning Outcomes

DEACTIVATED Dual Tract (Electrical / Nuclear) Technology A.S. (for comparison purposes only)

Required Courses (14 credits)		Units
EET 213	ELECTRONICS FUNDAMENTALS	6
EET 224	INDUSTRIAL ELECTRONICS	4
EET 267	POWER SYSTEMS AND ROTATING ELECTRICAL MACHINERY	4

Choose one of the following tracks :

Electrical Technology Track (17 credits)		Units
CTCH 163	CONSTRUCTION MANAGEMENT	3
EET 169	RESIDENTIAL WIRING	3
EET 181	NATIONAL ELECTRICAL CODE	3
EET 183	COMMERCIAL AND INDUSTRIAL WIRING SYSTEMS	4
EET 228	PLC AUTOMATION AND SOLAR MONITORING	4

Nuclear Maintenance Track (22 credits)		Units
EET 227	FLUID AND PNEUMATIC TECHNOLOGY	4
EET 257	COMPUTER INSTRUMENTATION AND CONTROL	4
EET 270	NUCLEAR POWER PROCESSES FOR TECHNICIANS	3
EET 271	NUCLEAR POWER FUNDAMENTALS	3
EET 272	NUCLEAR SYSTEMS MAINTENANCE I	4
EET 273	NUCLEAR SYSTEMS MAINTENANCE II	4

Total Units   **31 - 36**

DEACTIVATED Nuclear Energy Systems C.S. (for information only)

NUCLEAR ENERGY SYSTEMS Certificate of Specialization

This PG&E sponsored nuclear energy training program is based on guidelines set forth by the Nuclear Training Institute's (NEI) Nuclear Uniform Curriculum Program (NUCP). The two key goals of the program are to develop a pool of trained nuclear energy technicians, and to provide a career pathway for students and technicians to gain employment at PG&E or any nuclear power plant nation-wide.

In addition, students are introduced to the basic concepts, technology, and processes associated with the production of electrical power by general steam driven turbine systems.

Career Opportunities in Electronics & Electrical Tech

PG&E anticipates that during the next ten years, approximately 50% of their workforce at the Diablo Canyon Power Plant will retire. As RCNET (see below) points out, due to an aging workforce, international competition, and natural attrition, the nuclear industry in the United States is experiencing unprecedented workforce demands. Over the next two decades, nuclear workforce needs will exceed the current pool of trained personnel. Current training platforms are not scaled to meet this need which puts both the industry and our nation at risk. By 2030 the industry will need 41,000 trained nuclear power plant technicians nationwide. The Regional Center for Nuclear Education & Training (RCNET) is a National Science Foundation (NSF), Advanced Technology Education (ATE) program established to ensure that the demand for skilled nuclear technicians is met in a standardized and systematic way. It also provides career pathways for students and technicians and is a central point of contact for career assistance.

Required Courses (16 credits)		
EET 213	ELECTRONICS FUNDAMENTALS	6
EET 267	POWER SYSTEMS AND ROTATING ELECTRICAL MACHINERY	4
EET 270	NUCLEAR POWER PROCESSES FOR TECHNICIANS	3
EET 271	NUCLEAR POWER FUNDAMENTALS	3

Total Units   **16**

List current faculty, including part-time faculty

Name	Education	Occupation/Specialization
Bret Allen	BSEE *"Completion of additional units toward MSEE & MBA"*	Lead Faculty / EET-Specialization: Power & Electronic Systems / Electrical Contracting Technology (C-10 Lic,. Ret.) / Computer Instrumentation & Control, and Power Electronics Pre-Cuesta College: Electrical Engineer & Power Utility Manager, L.A. Dept. of Water & Power (15-years) Captain (Ret, *Reserve*) L.A. Sheriff's Dept. (DOJ/POST Lic., Ret.) Criminal Justice Department FSA
Chris Akelian	MSEE	Full-Time Faculty / EET- Specialization: Programmable Logic Controllers & SCADA. Computer and Network Technology Department (Lead Faculty) Pre-Cuesta College: Senior Electrical Engineer (Multiple Companies, 12+ years)
Alan Ross	Ph.D EE	Full-Time Faculty / ETT– Specialization: Electrical Technology, Lead Faculty Nuclear Technology Track (Deactivated by PG&E 2001), Engineering Department Faculty Pre-Cuesta College: Senior Electrical Engineer & Technical Advisor to the V.P. of Engineering, Teledyne Corp. (20+ - years)
Richard Goldsmith	BSME	Adjunct Faculty / Senior Engineer – Trust Automation, Inc. (22 years - Current) /ETT– Specialization: Industrial Electronics
Mike Fontes	BSET	Full-Time Faculty / EET- Specialization: Fluid and Pneumatics, Basic Electronics Laboratory. SLO County Deputy Welding Inspector,

		Welding Department Lead Faculty
Randy Canaday	BA	Adjunct Faculty / ETT– Specialization: Electrical Contracting Technology (C-10 Lic,. Ret.) - Paso Robles High School, CTE Faculty – K-12 Credentialed, 30 years (Ret.)

John Creedon	AS	Adjunct Faculty / EET– Specialization:
		Electrical Contracting Technology, Toma Electric (Current)

Describe how the Program Review was conducted and who was involved

The EET Lead Faculty (Bret Allen) did the first draft and review the 2022 – 2023 CPPR. Data was collected and analyzed from various sources including online searches and analysis of State workforce websites, Cuesta Matriculation data, data collected from Elumine, an Engineering & Technology survey, CurricuNET, feedback from local employers as well as EET students and communication with the CA Electrician Certification Unit. The EET Industrial Advisory Committee was also involved in the Program Review via feedback from online / zoom communication, and targeted telephone conversations. Subsequently, full-time EET faculty (Chris Akelian, Alan Ross, and Mike Fontes) and part-time EET faculty (Randy Canaday, Richard Goldsmith, and John Creedon) were solicited for input and asked to assess the CPPR for perspective and contributions.

II.   PROGRAM SUPPORT OF DISTRICT'S MISSION STATEMENT, INSTITUTIONAL GOALS, INSTITUTIONAL OBJECTIVES, AND/OR INSTITUTIONAL LEARNING OUTCOMES

A   Identify how your program addresses or helps to achieve the District's Mission Statement.

The EET program consistently strives to improve meeting the needs of our students and community. We are committed to be an inclusive department that inspires a diverse student population to achieve their educational goals. We support students in their efforts to improve foundational skills, earn certificates or associate degrees, transfer to four-year institutions (as desired), and advance in the workforce. The EET Department actively promotes innovative and challenging learning opportunities, enhances lives by promoting cultural, intellectual, personal, and professional growth and prepareing students to

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become engaged citizens in our increasingly complex community and world-wide.

The EET department continually strives to achieve foregoing and to meet the needs of new students, re-entry students, minority students, DSPS students, working students, and veterans.

In part, the EET department meets these challenges by predominantly offering courses in the late afternoon and evenings to accommodate the educational needs of the vast majority of students pursuing their state electrician certification and other electrical/electronic technology educational and placement goals. Although the majority of our student base secure placement in industry prior to or upon degree/certificate completion, we integrate the necessary core competencies into our curriculum for students seeking transfer to an electronic/ electrical technology or related four–year institution.

Through feedback from the community, local industry, and our advisory committee we are consistently reminded of the importance of fostering both technical competency as well as soft skills through our curriculum and instruction.

Our department faculty focus to establish and improve foundational skills, character building, cultural awareness, self respect and respect for others. We emphasize the value and importance of completing and earning certificates and degrees in light of the fact that many of our students find placement opportunities prior to completing requirements for certificates and/or degrees.

Through face-to-face laboratories, oral quizzes, group experiments and other opportunities for one-on-one, instructor – student interface our faculty strive to emphasize the importance of personal and professional growth to expand our students opportunities in the workplace and to become conscientious members of society beyond technical competency.

Our department positively encourages students to participate in on and off campus programs such as SkillsUSA, habitat for humanity, student governance, lab team building etc. to better position themselves for success and growth in the workplace, local community and worldwide. We continually engage our students through the program curriculum, in-person labs, mock interviews, and teaching techniques for building softskills to become engaged citizens in our increasingly complex communities and world.

B. Identify how your program addresses or helps to achieve the District's Institutional Goals and Objectives, and/or operational planning initiatives.

The EET program is designed to train re-entry students as well as all other types of students interested in seeking employment, promotion, or lateral transfer in the electronics or electrical field. Our primary function in supporting institutional goals, objectives, and/or operational planning initiatives is in placing community members into jobs. The specific jobs we train students for are entry level, intermediate, and high technology jobs, which require extensive safety training. As such, the vast majority of employment is found in "career oriented" jobs. These typically are high paying, high benefit, and ongoing training positions.

Additionally, the EET program is the only state certified electrician trainee entity within over 100 miles of the San Luis Obispo campus. Students who enter our program become immediately eligible for their Electrician Trainee Certification through the California's Division of Labor Enforcement (DLE). Under California labor code section 800 – 800.5, individuals working for electrical (C-10) contractors or other companies who regularly install electrical infrastructures subject to building and safety inspection must possess a valid Electrician Trainee Certification card to legally work in California unless they are a licensed electrical (C-10) contractors or possess a full Journey-Person certification through the DAS. Journey-Person certification requires successful completion of a DAS certified trainee program, passing the state electrician examination, and 5000 hours of OJT experience for residential work, or 8000 hours of OJT experience for commercial/industrial electrical work.

Most of our students eventually find substantial companies where they can develop their careers. This includes AS graduates., certificate awardees, and in most cases our students are employed before they complete their program of instruction. This trend results in less degrees and certificates awarded than the EET Department, advisory committee, or institution believe are in our students long-term best interests. Later in this report this trend and corresponding data is discussed in detail in addition to strategies that are currently being implemented with the goal of awarding more degrees and certificates to our students who are eligible for them. Historically, many EET students have met the academic requirement for certificates and/or degrees however, simply have not applied for the certificate/degree to be awarded. Since the last CPPR we have seen an increase in awarded certificates/Degrees however still have room for improvement and strategies to meet the challenge moving forward.

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C. Identify how your program helps students achieve Institutional Learning Outcomes.

ILO 1. Personal, Academic, and Professional Development

Through our faculty and support staff's efforts to maintain a robust state certified electrical and electronic technology program, our department enjoys the distinction of being the only entity in the county which is certified as a general electrician trainee institution. The general electrician trainee status is the highest level of non-union electrical certification possible in the state of California.

Through our department wide pedagogy we offer practical robust curriculum that promote academic and professional development for all of our students. Our faculty continually seek innovative methods to assist our students in recognizing and demonstrating the skills and behaviors that promote academic competency, excellence, and professional development.

Through weekly lectures, laboratories, and online learning opportunities we focus on demonstrating the professional skills that are necessary for placement with career oriented employers. Through extracurricular educational options such as SkillsUSA, we emphasize the value and importance of "going the extra mile" to promote trade and academic excellence. We emphasize the importance of soft skills to employers and the importance of personal health and mental well-being in order for our students to reach their full potential.

ILO 2. Critical Thinking and Communication

Our department faculty continually emphasize that in order for our students to best prepare themselves for trade and/or academic excellence they should strive to be able to explain what they have learned in a clear and concise manner. This requires students to assess and evaluate their thinking and problem solving processes as well as those of other individuals they interact with.

Proficiency in electrical and/or electronics technology requires the ability to analyze and communicate relatively complex subject matter (electricity) in a clear and logical way. We also work to emphasize the importance of character, integrity, and teamwork to satisfy the highest expectations of current or future employers.

ILO 3. Scientific and Environmental Understanding

Our faculty emphasize that understanding electrical and/or electronic technology is largely based on familiarity with the scientific method, the ability to predict electrical phenomenon which can then be demonstrated and observed during laboratory experiments.

We also continually emphasize that electrical/electronic technology inherently requires the ability to analyze technical information and communicate with team members with a practical but formal symbolic set of skills. We also heavily emphasize the uncompromising need to understand and utilize safe work practices. Students quickly learn that in order to practice their trade successfully, it is essential to assess and manage their actions and the need to clearly communicate with others in order to be in control of their work environments.

Electrical technology is inherently tied to physics, the scientific method, and the ability to interpret and analyze technical information. In our program we emphasize the importance of mastering basic technical theories and industry standards in order to be successful in this field.

The more diverse and technically fluent a student can strive to become, the more value they will have to offer current or future employers. Additionally, many electrical technology trades and employment opportunities require that students become knowledgeable and proficient with equipment, computers, and software.

ILO 6. Technical and Informational Fluency

In our program, we emphasize that becoming fluent with a wide variety of practical PC software will enable them to better report and communicate their work and projects to and with their employers. We also emphasize the importance of diverse written communication. Industry guest speakers very typically emphasize that and inability to fluently communicate verbally and in writing may limit their promotability.

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D. PROGRAM DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS
(Where applicable the success metrics are aligned with the Student Success Metrics/SCFF).

The data components are hyperlinked below.

Insert the data chart and explain observed differences between the program and the college.

General Enrollment (Insert Aggregated Data Chart)

SLOCCCD Program Review Data - Enrollment

Department: Electronics & Electrical Tech   Course: All   Dual Enrollment: All   Prison: Not CMC:Prison

Electronics & Electrical Tech Enrollments

Academic Year	Enrollments
2016 - 2017	191
2017 - 2018	302
2018 - 2019	360
2019 - 2020	350
2020 - 2021	343

% Change - Overall College Enrollments

Academic Year	% Change
2016 - 2017	1.37%
2017 - 2018	2.64%
2018 - 2019	-0.56%
2019 - 2020	-14.02%

% Change - Electronics & Electrical Tech

Academic Year	% Change
2017 - 2018	58.12%
2018 - 2019	19.21%
2019 - 2020	-2.78%
2020 - 2021	-2.00%

Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

<u>General Enrollment Narrative:</u>

For 2019 - 2020 the EET department was 0.56% below the college average and 2.78% below the EET Department average. This decrease for the 2019 – 2020 academic year for the department is attributed to the COVID-19 pandemic however is statistically negligible.

For 2018 - 2019 the EET department experienced a 19.21% increase while overall college enrollments were down 0.56%. We primarily attribute the 19.21% increase the 2018 – 2019 academic year to the electrical construction industry and the recruitment of many students (who had been issued their state electrician trainee certifications) by area contractors. Numerous students who were taking intermediate and/or advanced EET courses during 2018 – 2019 accepted full-time employment with area electrical contractors and suspended or reduced their course loads during 2019 – 2020 while working full time and in the probationary phase of their new employment.

Insert the data chart and explain observed differences between the program and the college.

General Student Demand (Fill Rate) (Insert Aggregated Data Chart)

- SEE FOLLOWING PAGE -

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SLOCCCD Program Review Data - Student Demand (Fill Rate)

Department:
Electronics & Electrical Tech

Course:
All

Dual Enrollment:
Not Dual Enrollment

Prison
Not CMC:Prison

Overall College Fill Rate

Academic Year	Fill Rate
Academic Year 2016 - 2017	83.71%
Academic Year 2017 - 2018	81.14%
Academic Year 2018 - 2019	83.19%
Academic Year 2019 - 2020	83.59%
Academic Year 2020 - 2021	81.07%

Electronics & Electrical Tech Fill Rate

Academic Year	Fill Rate
Academic Year 2016 - 2017	78.93%
Academic Year 2017 - 2018	82.07%
Academic Year 2018 - 2019	87.80%
Academic Year 2019 - 2020	85.57%
Academic Year 2020 - 2021	73.45%

Fill Rate: The ratio of enrollments to class limits. Cross listed class limits are adjusted appropriately.
Also, courses with zero class limits are excluded from this measure.

As with the pattern across the campus, fill rates have been relatively steady. Fill rates in EET have also remained relatively steady since 2016 – 2017 with over a 10% decrease over the 2020 – 2021 academic year. We mainly attribute this to the state Electrician Trainee certification program as well as the states requirement for continuing education for journey level electricians who have attained their full general and/or residential certification(s). The 2020 - 2021Decrease within EET is primarily attributed to the COVID-19 pandemic.

This has resulted in relatively full sections of most EET courses since the 2016 - 2017 academic year. During the 2018 – 2019 academic year the EET student demand (fill rate) increased to 87.80% the highest sense 2016 – 2017.

Typically, certified electrician trainees are averaging in excess of $20 per hour after approximately 14 months of experience with local electrical contractors and other area employers seeking the skill sets that the vast majority of our students possess and/or are developing. Some of the larger area employers (e.g., PG&E) hire qualified entry-level employees at over $30 per hour. Most area employers who recruit our students offer overtime hours to new employees who have successfully completed their probationary period.

Insert the data chart and explain observed differences between the program and the college.

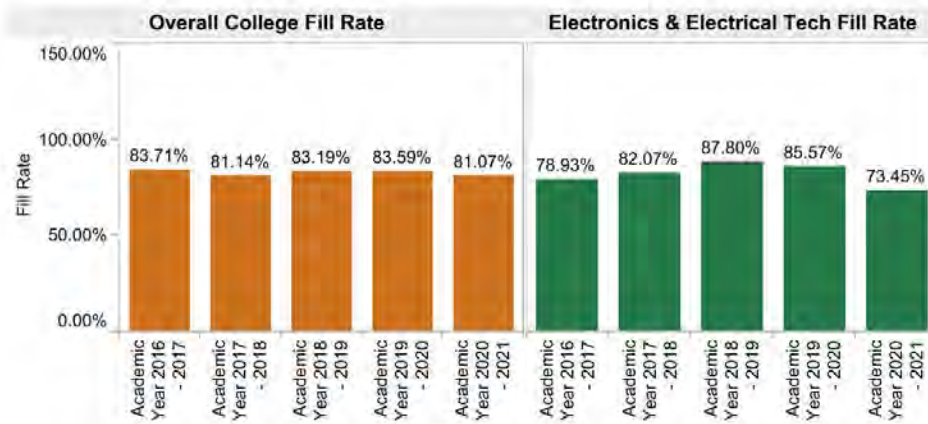General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)

- SEE FOLLOWING PAGE -

18 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
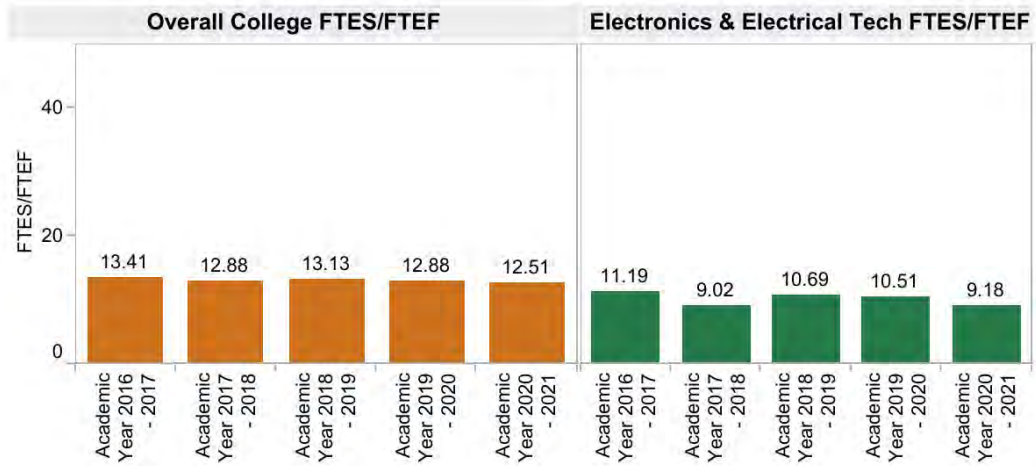Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

SLOCCCD Program Review Data - Efficiency (FTES/FTEF)

Department:
Electronics & Electrical Tech

Course:
All

Dual Enrollment:
All

Prison:
All

Overall College FTES/FTEF

Academic Year	FTES/FTEF
Academic Year 2016 - 2017	13.41
Academic Year 2017 - 2018	12.88
Academic Year 2018 - 2019	13.13
Academic Year 2019 - 2020	12.88
Academic Year 2020 - 2021	12.51

Electronics & Electrical Tech FTES/FTEF

Academic Year	FTES/FTEF
Academic Year 2016 - 2017	11.19
Academic Year 2017 - 2018	9.02
Academic Year 2018 - 2019	10.69
Academic Year 2019 - 2020	10.51
Academic Year 2020 - 2021	9.18

FTES/FTEF: The ratio of total FTES to Full-Time Equivalent Faculty
(SXD4 Total-Hours/17.5)/XE03 FACULTY-ASSIGNMENT-FTE)

General Efficiency (FTES/FTEF) Narrative:

The EET Departments overall efficiency (FTES/FTEF) decreased from 11.19 (2016 – 2017) to 9.18 (2020 – 2021), our overall efficiency between 2017 – 2018 and 2018 -2019 increased from 9.02 to 10.69, then 10.51 for 2019 -2020.

In the summer of 2016, we continued offering the 6.0-unit Electronic Fundamentals (EET-213) course as well as the 4-unit State Electrician Trainee Topics (EET-119) course over the 8-week summer sessions. Although attrition during the summer is higher than attrition during the Fall or Spring semesters the course has been popular and clearly meets the needs of students who are unable to manage a 6-unit hybrid course which includes a 1-unit face-to-face lab during the Fall or Spring. The higher attrition of students in the 8-week summer session of EET-213 had some impact in the Department Efficiency dropping to 9.18 during 2020 – 2021 in addition to impacts from the COVID-19 pandemic. In discussions with local industry, students, faculty, and district administrators the summer offerings have proven highly effective overall and allows the EET department to avoid an "over impacted" program during the fall and spring semesters.

In comparing the median college wide efficiency (12.96) to the median EET efficiency (10.12) over the past cycle the difference is 2.84. We attribute the difference to be primarily due to the nature of CTE programs and especially the EET program. Maximum (save) course capacities for electrical and electronic laboratories are significantly lower due to the inherent safety protocols necessary to provide students with safe instruction and hands-on learning. Facility/laboratory space limits the maximum number of students who can be safely accommodated for instruction. Although we realize that program efficiency is of significant importance to the college district student safety simply cannot be compromised.

Insert the data chart and explain observed differences between the program and the college.

Student Success—Course Completion by Modality (Insert Data Chart)

- SEE FOLLOWING PAGE -

20 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
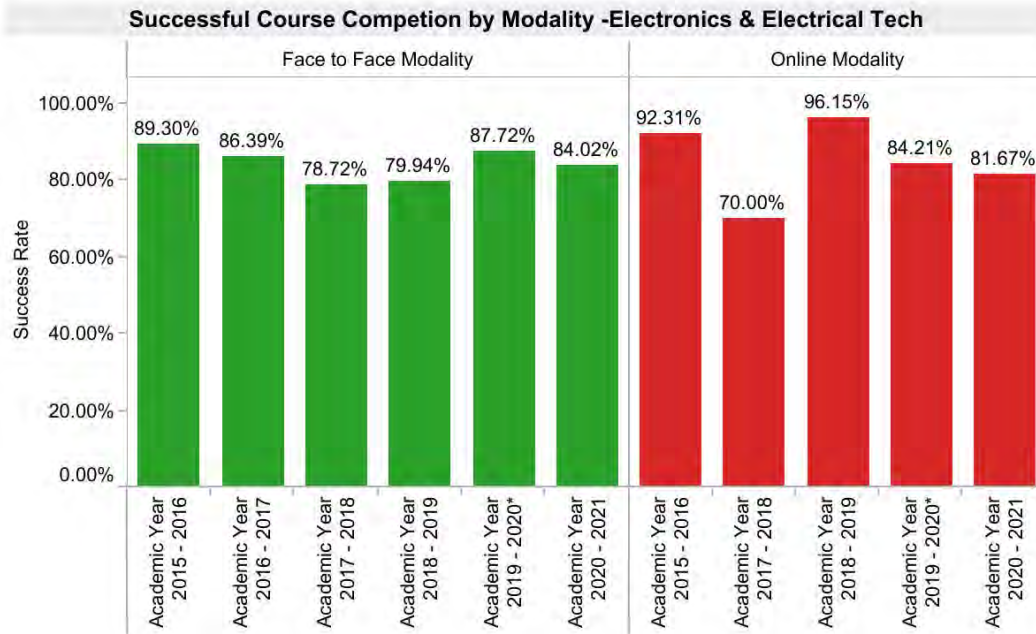Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
All

Legend:
🟩 Face to Face Modality
🟥 Online Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

21 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET113

Legend:
■ Online Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Successful Course Competion by Modality Table - Electronics & Electrical Tech

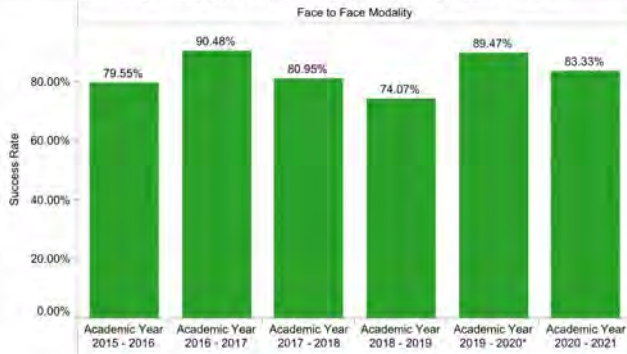|		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET119

Legend:
■ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
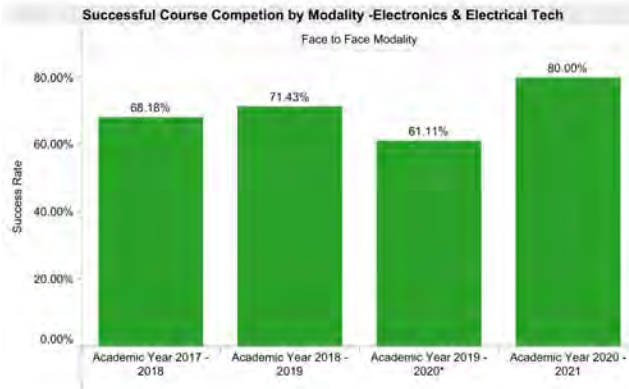

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET169

Legend:
🟩 Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
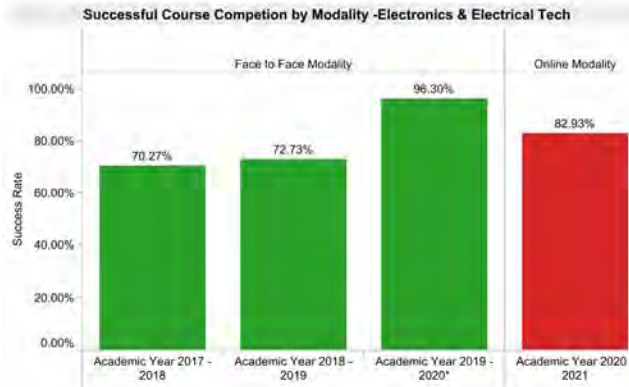
Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm...	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm...	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET181

Legend:
🟩 Face to Face Modality
🟥 Online Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Successful Course Competion by Modality Table - Electronics & Electrical Tech
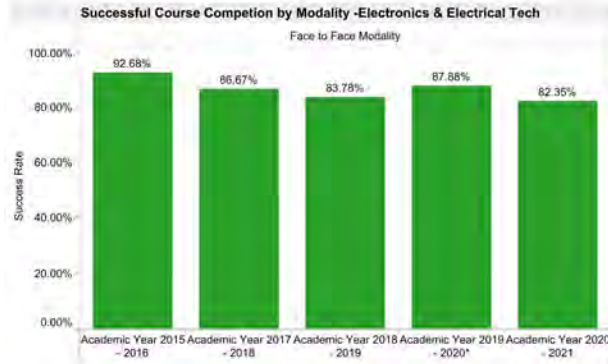
		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm...	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm...	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department: Electronics & Electrical Tech
Course: EET183
Legend: Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Face to Face Modality

	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
Total Department Enrollm.	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
Total Department Enrollm.	13.0		20.0	26.0	38.0	120.0

Successful Course Competion by Modality Table - Electronics & Electrical Tech

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SLOCCCD Program Review Data: Successful Course Completion

Select Department: Electronics & Electrical Tech
Course: EET213
Legend: Face to Face Modality / Online Modality

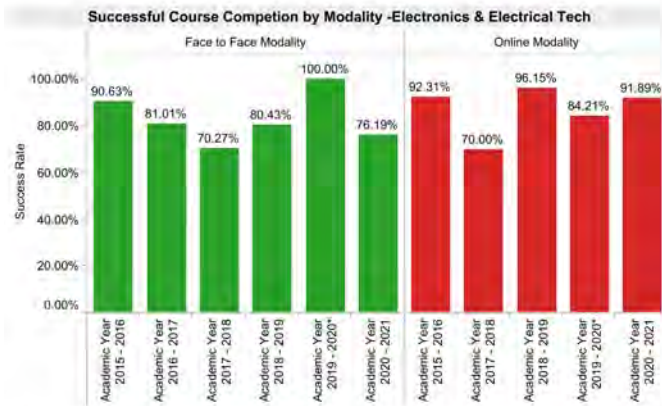### Successful Course Competion by Modality -Electronics & Electrical Tech

	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
Total Department Enrollm.	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
Total Department Enrollm.	13.0		20.0	26.0	38.0	120.0

Successful Course Competion by Modality Table - Electronics & Electrical Tech

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET224

Legend:
▮ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
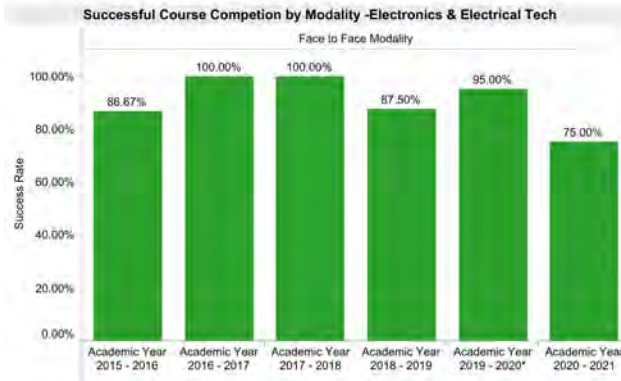Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET227

Legend:
▮ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
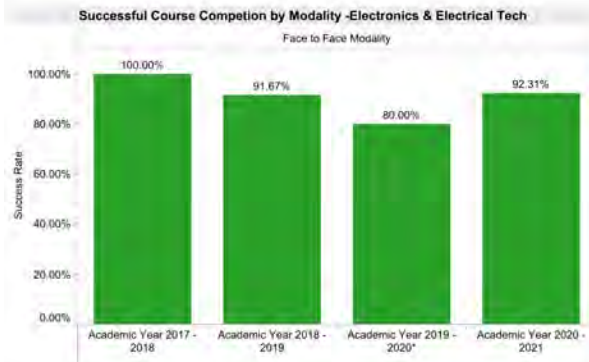Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department: Electronics & Electrical Tech

Course: EET228

Legend: ■ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
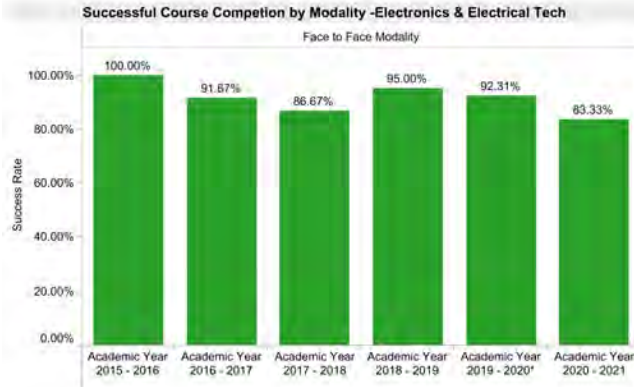#### Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department: Electronics & Electrical Tech

Course: EET257

Legend: ■ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
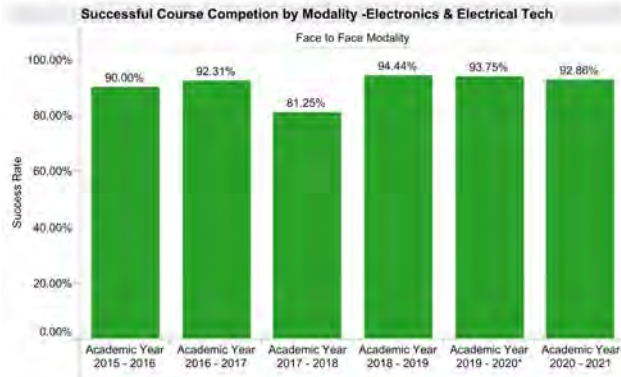#### Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET267

Legend:
🟩 Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
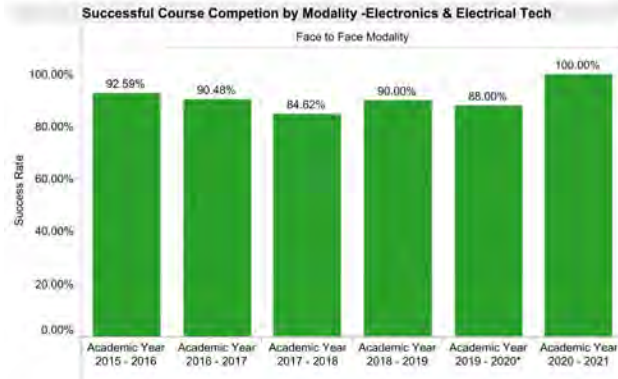
Face to Face Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm...	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm...	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET270

Legend:
🟩 Face to Face Modality
🟥 Online Modality

Successful Course Competion by Modality -Electronics & Electrical Tech
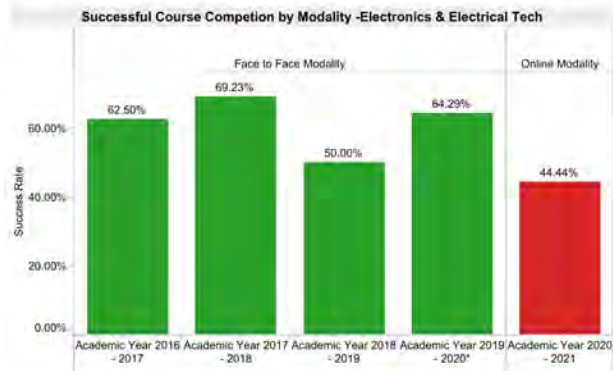
Face to Face Modality   Online Modality

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm...	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm...	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET271

Legend:
■ Face to Face Modality
■ Online Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Face to Face Modality — Online Modality

- 85.71% — Academic Year 2016 - 2017
- 65.00% — Academic Year 2017 - 2018
- 69.23% — Academic Year 2018 - 2019
- 77.78% — Academic Year 2019 - 2020*
- 45.45% — Academic Year 2020 - 2021

Success Rate (Y-axis: 0.00% to 80.00%)

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET272

Legend:
■ Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Face to Face Modality

- 80.00% — Academic Year 2017 - 2018
- 100.00% — Academic Year 2018 - 2019
- 90.00% — Academic Year 2019 - 2020*
- 71.43% — Academic Year 2020 - 2021

Success Rate (Y-axis: 0.00% to 100.00%)

Successful Course Competion by Modality Table - Electronics & Electrical Tech

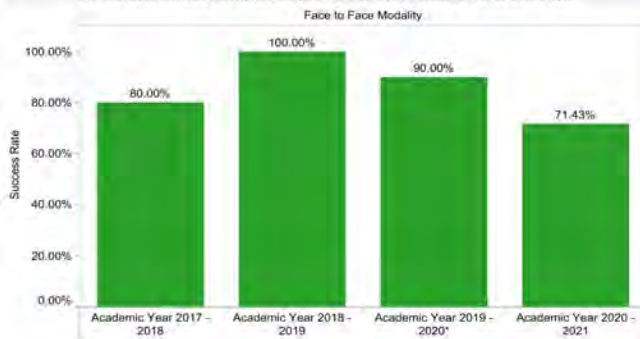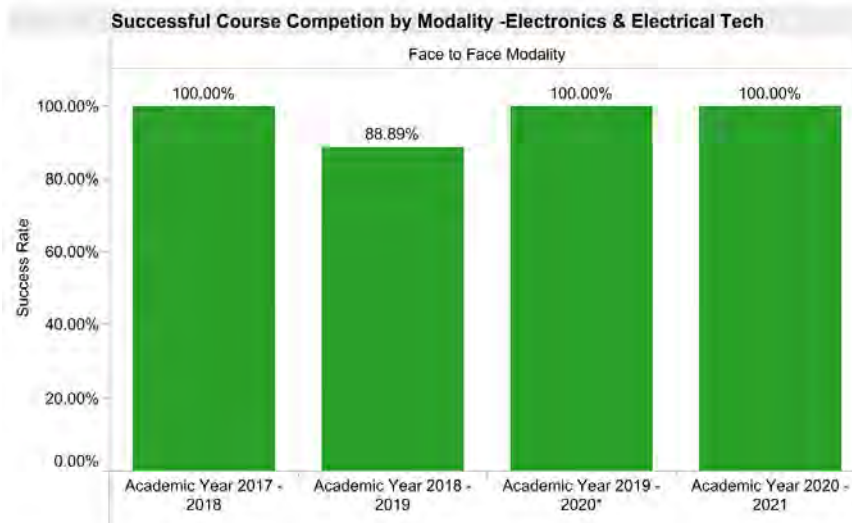|		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm..	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm..	13.0		20.0	26.0	38.0	120.0

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

Course:
EET273

Legend:
🟩 Face to Face Modality

Successful Course Competion by Modality -Electronics & Electrical Tech

Face to Face Modality

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Success Rate	100.00%	88.89%	100.00%	100.00%

Successful Course Competion by Modality Table - Electronics & Electrical Tech

		Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Face to Face Modality	Department Success Rate	89.30%	86.39%	78.72%	79.94%	87.72%	84.02%
	Total Department Enrollm...	215.0	191.0	282.0	334.0	312.0	223.0
Online Modality	Department Success Rate	92.31%		70.00%	96.15%	84.21%	81.67%
	Total Department Enrollm...	13.0		20.0	26.0	38.0	120.0

Student Success—Course Completion by Modality Narrative:

Based on the bar charts and data in the graphs above (emphasizing the first successful course completion by modality graph which represents all program courses), successful course completion for face-to-face instructional modality decreased very slightly. The data shown for 2017 – 2018 vs 2020 – 2021 shows an increase in successful course completion.

Strategies implemented over this last cycle to increase student success include an increased awareness of the existence of, and need for, electrical contractors and some area employers to require all applicants to be certified electrician trainees through the state DLE and Cuesta EET program to be in compliance with state law (CLC 800 -800.5). Some area contractors have incurred substantial fines for lack of compliance with state law related to electrical workers who are not certified. This requirement has continued to be discussed extensively with the EET

29 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

advisory committee and other area employers resulting in the certification becoming a virtual prerequisite for most new employees well as continued employment.

This increased awareness of the need to have active employees and applicants enrolled in a state certified program has increase the importance of having "non-journey level" personal successfully complete program courses to meet the minimum academic annual hourly requirement of 150 academic hours per calendar year in courses approved by the state in the crosswalk. This has resulted in ongoing and increased interest and successful course completion within the department. The EET program is the only state certified (non-union) program in the county and within over 100 miles of the main campus.

Additionally, the law requiring certification has increased wages for entry-level employees by approximately $3.50 per hour (ave. $15-$17/hr.) and individuals with approximately 15 months of experience are typically earning more than $20 per hour. Individuals with approximately three years of experience are earning more than $27 per hour. Both word-of-mouth advertising and direct advertising of these typical earning statistics continue to increase the popularity of the EET program and interest in various electrical technology employment opportunities resulting in sustained and projected increases and successful course completion.

Further implementation of canvas as well as other improvements to curriculum delivery within the department have increase the practicality of instructional methodologies which have increase the popularity of several department courses and resulted in sustained growth. Additionally, the COVID-19 pandemic has resulted in an increased interest and successful completion of EET courses offering an online modality (hybrid and blended.)

Insert the data chart and explain observed differences between the program and the college.

Degrees and Certificates Awarded (Insert Data Chart)

Insert the data chart and explain observed differences between the program and the Institutional Set Standard. If your program did not meet the Institutional Set Standard, please describe how you will implement activities to meet the Institutional Set Standard.

What resources might you need to meet and exceed the Institutional Set Standard?
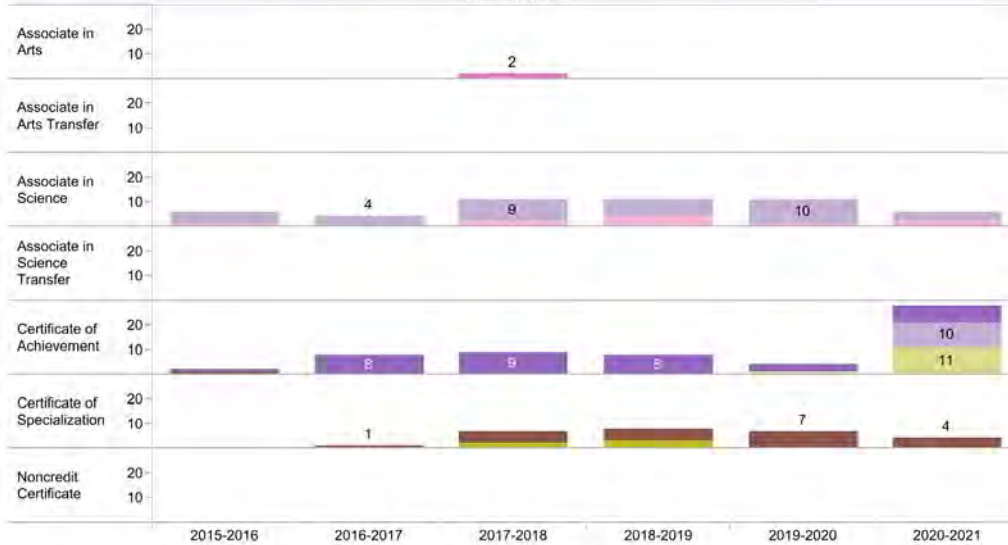
   - SEE FOLLOWING PAGE -

SLOCCCD Program Review Data: Degrees and Certificates Awarded

Program:
Multiple values

Award Type:
All

Program Awards
Top Code Description(s): Electrical & Electronics & Electric Tech
Award(s): All

Award Type	Award	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Associate in Arts	Electronics Technology (AA)			2			
	Total			2			
Associate in Science	Electrical Technology (AS)	5	4	9	7	10	4
	Electronics Technology (AS)	1		2	4	1	2
	Total	6	4	11	11	11	6

Program Awards: The number of degress and certificates awarded by program type

Degrees and Certificates Awarded - Narrative:

As depicted by the graph and data above, the number of EET students who applied for and were awarded certificates and degrees were a significant improvement from the 2012 – 2016 cycle. During the 2016 – 2021 cycle there were 49 Associate of Science degrees awarded whereas over the 2012 – 2016 cycle 2015 – 2016 there were only 2 Associate of Science degrees awarded in EET. Additionally, there was over a 5-fold increase in awarded certificates between the 2 mentioned cycles. Although this increase is positive the total degrees and certificates awarded is still considered low in comparison to students who completed the necessary coursework to apply for and be awarded degrees and certificates.

Contributing factors to this trend:

As described previously in this CPPR, we attribute this situation with degrees and certificates to be

associated with the fact that the vast majority of students in the program obtain their electrician trainee certifications during their first or second semester of study then begin or continue to work full or part time in the electrical contracting or related electrical technology industry and not apply for degrees and/or certificates they have earned.

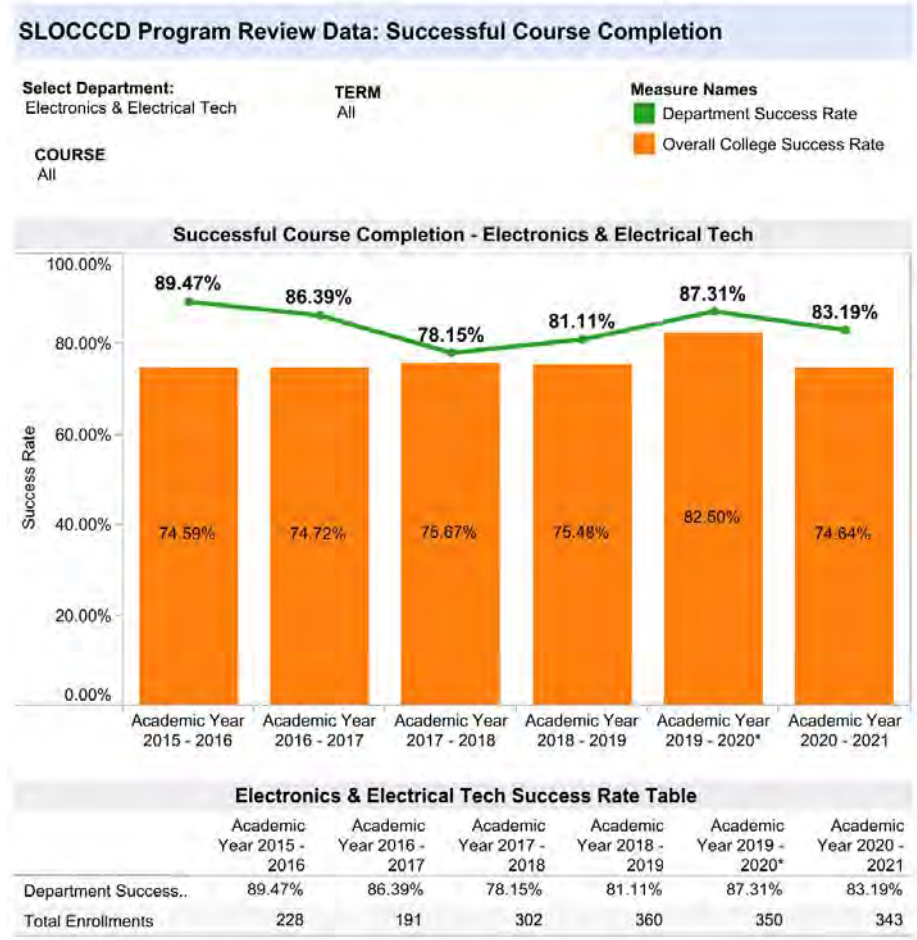<u>Resources needed to meet and exceed the Institutional Set Standard:</u>
Our industry advisory committee is highly supportive in offering internships as well as part-time/full-time employment opportunities to a large percentage of the students once they have completed the introductory courses in the program. By the time many students have progressed to intermediate or advanced courses in the program many area employers are seeking full-time employment commitments from our students because most have obtained their state electrician trainee certifications and/or sufficient technical knowledge and hands-on capabilities to be productive team members.

By the time many students have completed the minimum requirements to be eligible to sit for the state general electrician certification they are working full time (many overtime as well) and are focused on final preparations to sit for the state exam(s). Most area employers do not provide an immediate financial incentive for students to show evidence that they were awarded degrees or certificates. Resources to improve awarded degrees and certificates begin with faculty and counselors further emphasizing and encouraging students to apply for degrees/certificates. We will be increasing the frequency of Industry guest speakers to clarify the importance of certificates in degrees for higher wages, promotions, foreman and manager positions as well as opportunities to pursue higher level education in the future. Additionally, students who seek to gain their electrical contracting C-10 license require less on the job experience to qualify to sit for the C-10 electrical contracting exam through the registrar of contractors.

Insert the data chart and explain observed differences between the program and Institutional Set Standard (as shown on the chart). If your program did not meet the Institutional Set Standard, please describe how you implement activities to meet the Institutional Set Standard.

What resources might you need to meet and exceed the Institutional Set Standard?

SLOCCCD Program Review Data: Successful Course Completion

Select Department:
Electronics & Electrical Tech

COURSE
All

TERM
All

Measure Names
■ Department Success Rate
■ Overall College Success Rate

Successful Course Completion - Electronics & Electrical Tech

	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Department Success (green line)	89.47%	86.39%	78.15%	81.11%	87.31%	83.19%
Overall College Success (orange bars)	74.59%	74.72%	75.67%	75.48%	82.50%	74.64%

Electronics & Electrical Tech Success Rate Table

	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021
Department Success..	89.47%	86.39%	78.15%	81.11%	87.31%	83.19%
Total Enrollments	228	191	302	360	350	343

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

33 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

General student success – course completion (overall) for the 2020 – 2021 academic year was 83.19% as compared to the overall college success rate of 74.64%. Over the past six academic years the average EET course completion rate is 84.27% as compared to the overall college success rate over the past six academic years of 76.27%. We attribute the higher EET General student success rate to the fact that the majority of EET students enter the program with the goal of completing the requirements to sit for the state General Electrician Certification Exam and pursue this trade for part or all of their careers.

Review the Disaggregated Student Success charts; include any charts that you will reference. Describe any departmental or pedagogical outcomes that have occurred as a result of programmatic discussion regarding the data presented.
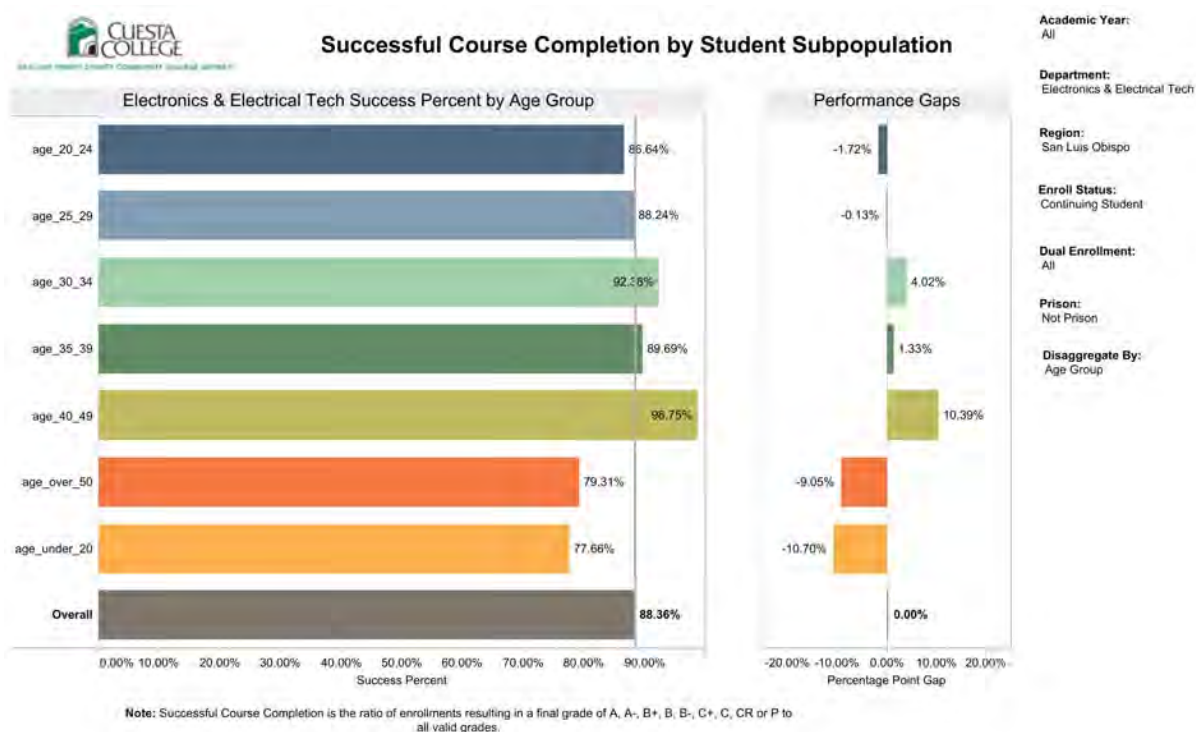
By student subpopulation, the only notable performance gap applies to students between student age under age 40 -49. This is likely due to this age group corresponding to re-entry students seeking to either change careers or enhance their existing electrical skills for promotion or lateral transfer.

Successful Course Completion by Student Subpopulation
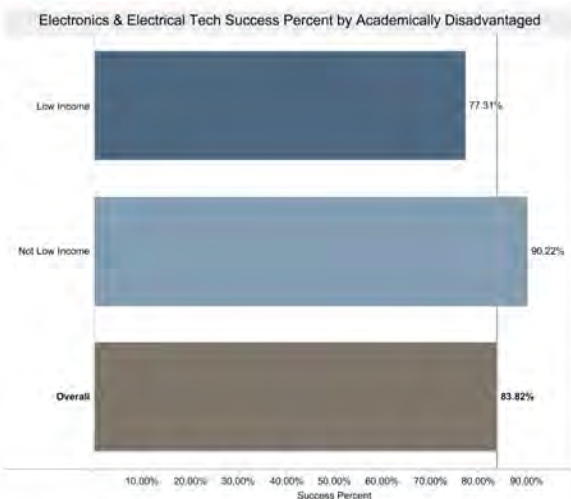
Electronics & Electrical Tech Success Percent by Academically Disadvantaged
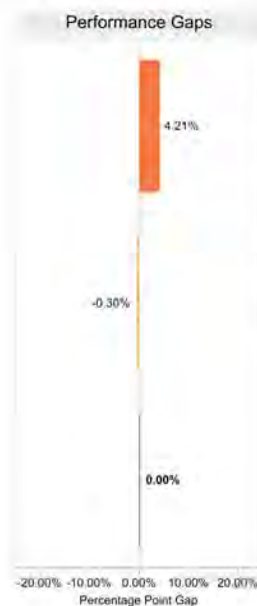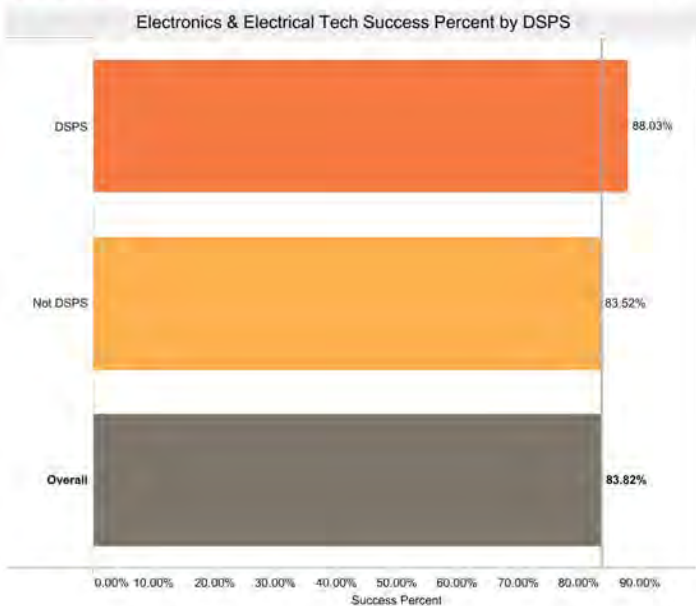
Performance Gaps

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: Academically Disadvantag...

Low Income — 77.31% — -6.51%
Not Low Income — 90.22% — 6.40%
Overall — 83.82% — 0.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by DSPS
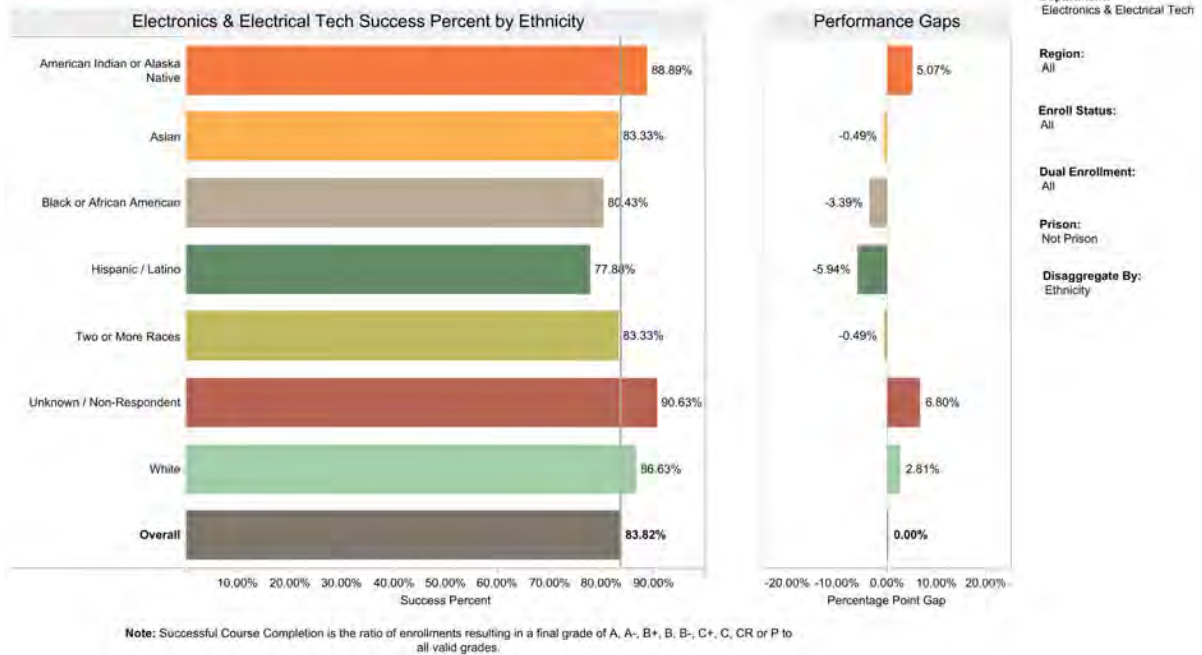
Performance Gaps

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: DSPS

DSPS — 88.03% — 4.21%
Not DSPS — 83.52% — -0.30%
Overall — 83.82% — 0.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

The graph above depicts performance gaps for DSPS versus non-DSPS students. The only noticeable performance gap applies to DSPS students at + 4.21%. Our department faculty focus to be very DSPS accommodating and supportive. We work to identify and assist students with any need(s) for accommodations.
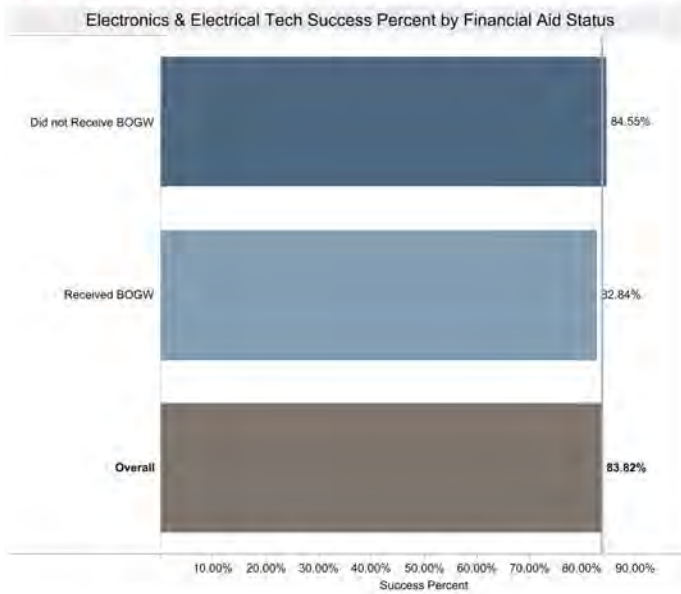
Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Ethnicity

Ethnicity	Success Percent	Performance Gap
American Indian or Alaska Native	88.89%	5.07%
Asian	83.33%	-0.49%
Black or African American	80.43%	-3.39%
Hispanic / Latino	77.88%	-5.94%
Two or More Races	83.33%	-0.49%
Unknown / Non-Respondent	90.63%	6.80%
White	86.63%	2.81%
Overall	83.82%	0.00%

Academic Year: All
Department: Electronics & Electrical Tech
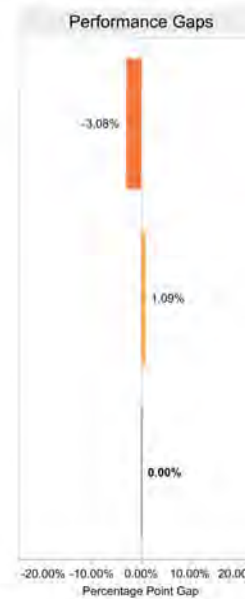Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: Ethnicity

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Additional assessment of successful course completion by student population indicates a positive 5.07% performance gap with American Indian or Alaska Native students. The graph above indicates a – 3.39% performance gap for Hispanic / Latino students and a -3.39% gap for Black or African American students.

36 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Financial Aid Status

Category	Success Percent
Did not Receive BOGW	84.55%
Received BOGW	82.84%
Overall	83.82%

Performance Gaps

Category	Percentage Point Gap
Did not Receive BOGW	0.73%
Received BOGW	-0.98%
Overall	0.00%

Success Percent axis: 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00%

Percentage Point Gap axis: -20.00% -10.00% 0.00% 10.00% 20.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: Financial Aid Status

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by First Generation

Category	Success Percent
First Generation	80.74%
Not First Generation	84.91%
Overall	83.82%

Performance Gaps

Category	Percentage Point Gap
First Generation	-3.08%
Not First Generation	1.09%
Overall	0.00%

Success Percent axis: 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00%

Percentage Point Gap axis: -20.00% -10.00% 0.00% 10.00% 20.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: First Generation

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Gender

	Success Percent	Performance Gap
Female	88.24%	4.41%
Male	83.47%	-0.35%
Unknown	92.86%	9.04%
Overall	83.82%	0.00%

Academic Year: All

Department: Electronics & Electrical Tech
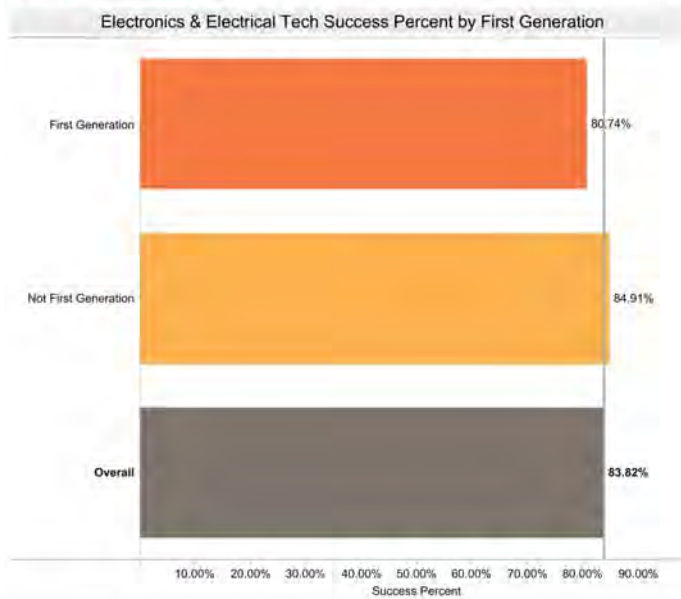
Region: All

Enroll Status: All

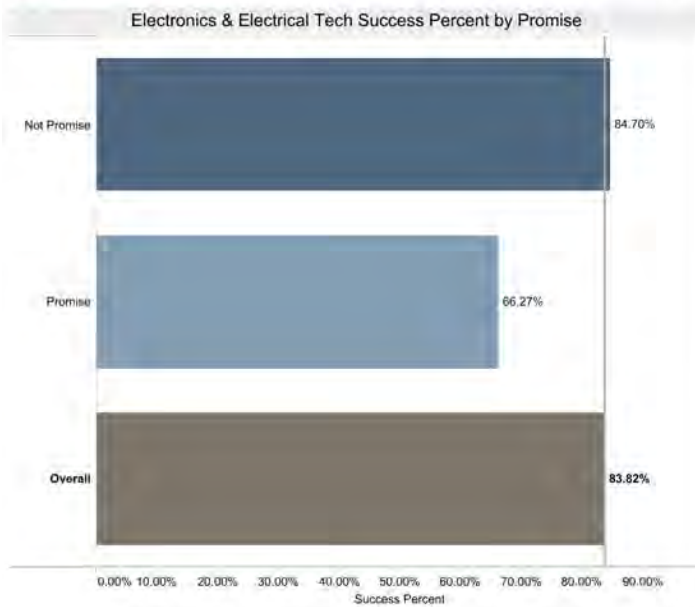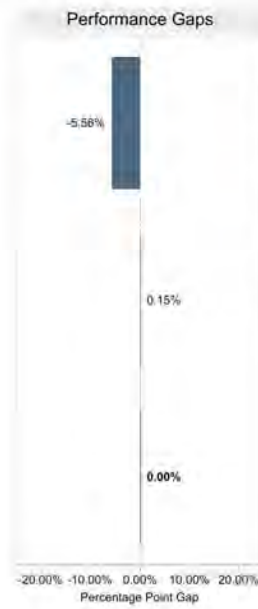Dual Enrollment: All

Prison: Not Prison

Disaggregate By: Gender

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.
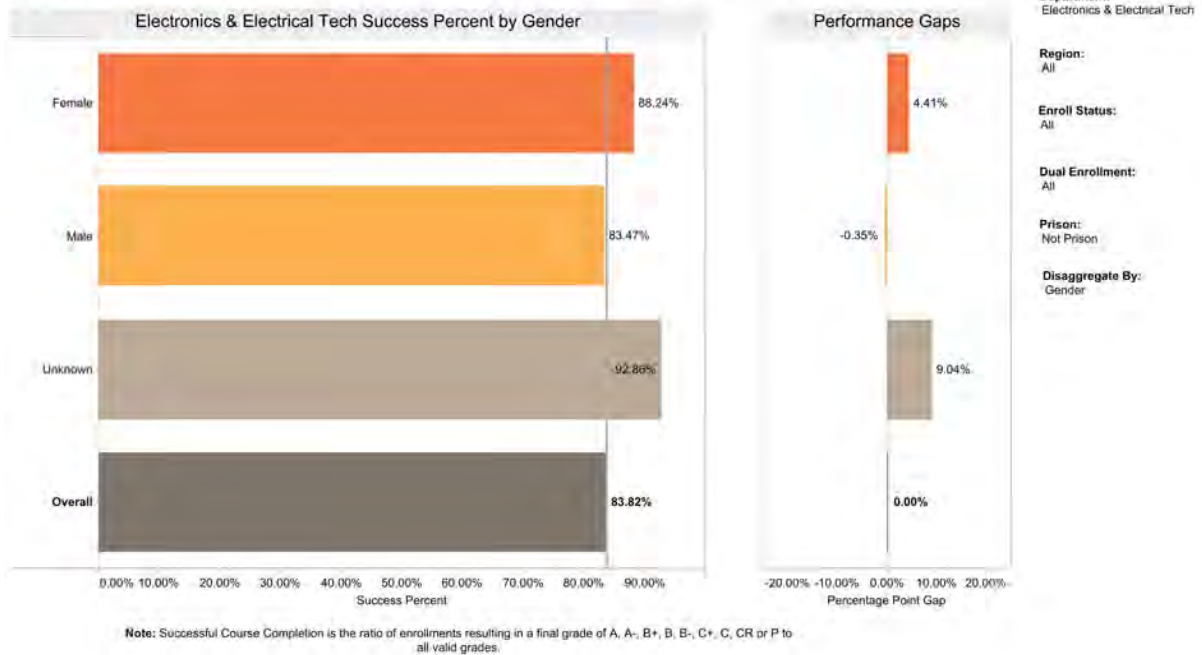
The graph and data above depict student success by gender. The only identifiable student success tied to gender applies to female and "unknown" students at a +4.41% and +9.09% performance gap respectfully. As described previously in this report the electrical contracting trade and other electrical/electronic technology positions in industry tend to be dominated by males. The data available indicates a -0.35% performance gap for males which seem to be inconsistent with faculty observations in EET courses.

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Math Placement

Performance Gaps

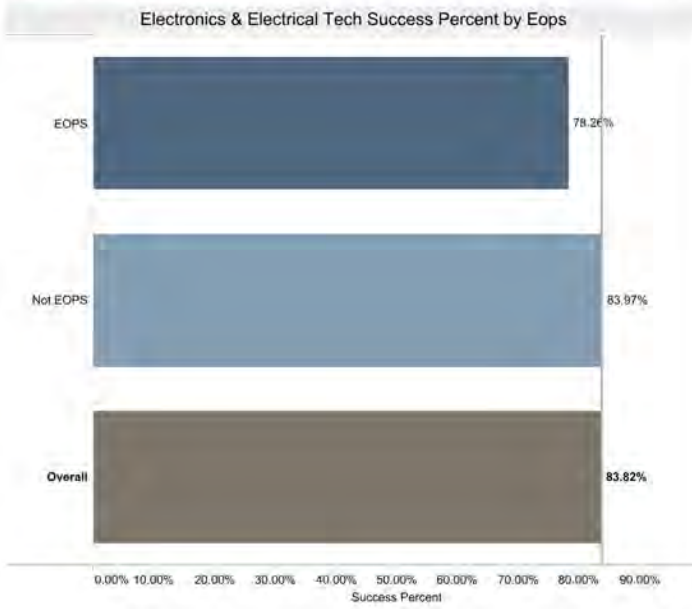|	Success Percent	Percentage Point Gap
Did Not Test in Math	82.37%	-1.45%
Not Transferable Math	84.03%	0.21%
Transferable Math	84.54%	0.72%
Overall	83.82%	0.00%

Academic Year: All

Department: Electronics & Electrical Tech

Region: All

Enroll Status: All

Dual Enrollment: All

Prison: Not Prison

Disaggregate By: Math Placement
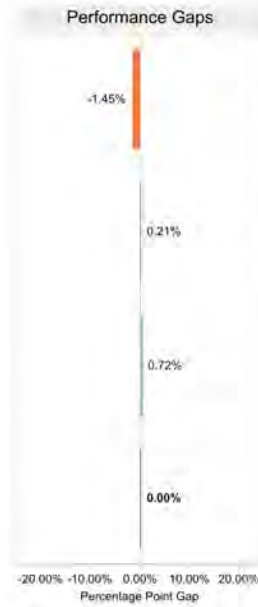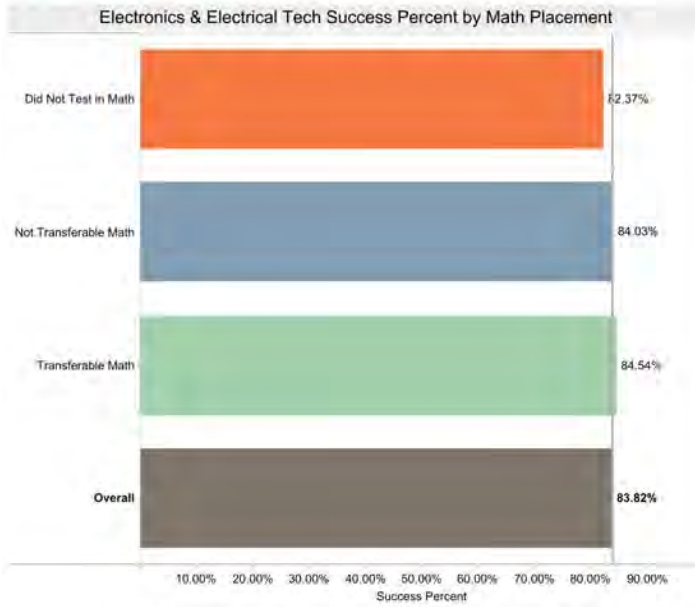
Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

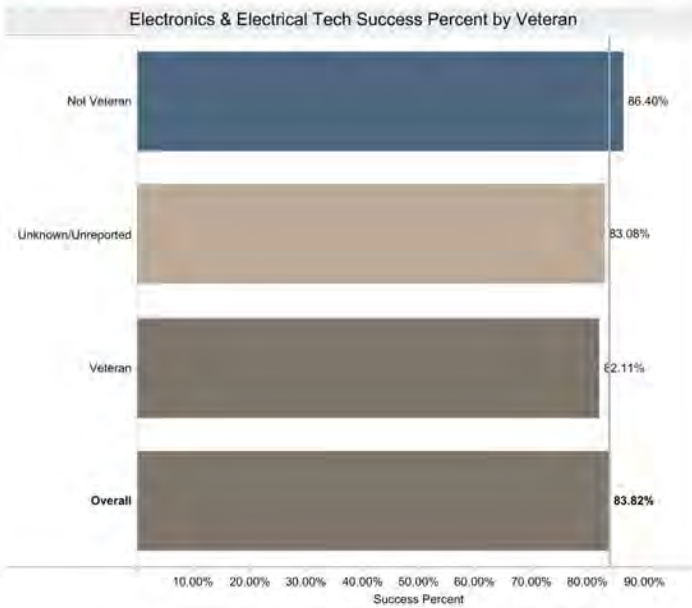**Successful Course Completion by Student Subpopulation**

Electronics & Electrical Tech Success Percent by Promise

Performance Gaps

	Success Percent	Percentage Point Gap
Not Promise	84.70%	0.88%
Promise	66.27%	-17.55%
Overall	83.82%	0.00%

Academic Year: All

Department: Electronics & Electrical Tech

Region: All

Enroll Status: All

Dual Enrollment: All

Prison: Not Prison

Disaggregate By: Promise

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

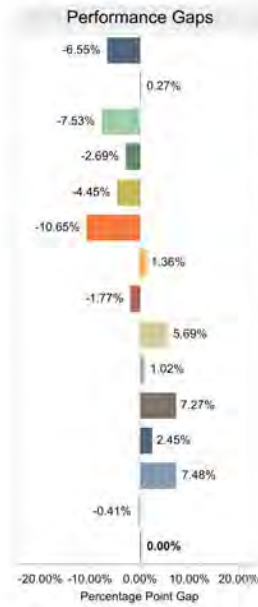**Successful Course Completion by Student Subpopulation**

Electronics & Electrical Tech Success Percent by Eops | Performance Gaps

EOPS — 78.26% | -5.58%
Not EOPS — 83.97% | 0.15%
Overall — 83.82% | 0.00%

Success Percent | Percentage Point Gap

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
Dual Enrollment: All
Prison: Not Prison
Disaggregate By: Eops

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

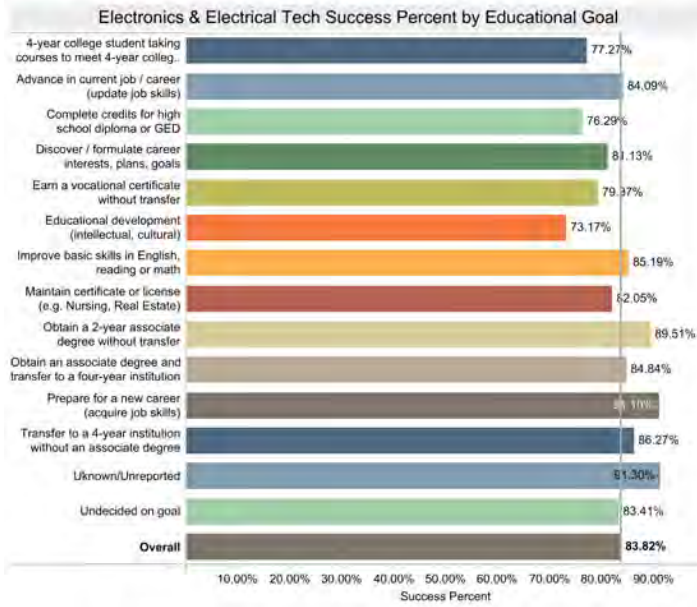**Successful Course Completion by Student Subpopulation**

Electronics & Electrical Tech Success Percent by Veteran | Performance Gaps

Not Veteran — 86.40% | 2.58%
Unknown/Unreported — 83.08% | -0.75%
Veteran — 82.11% | -1.72%
Overall — 83.82% | 0.00%

Success Percent | Percentage Point Gap

Academic Year: All
Department: Electronics & Electrical Tech
Region: All
Enroll Status: All
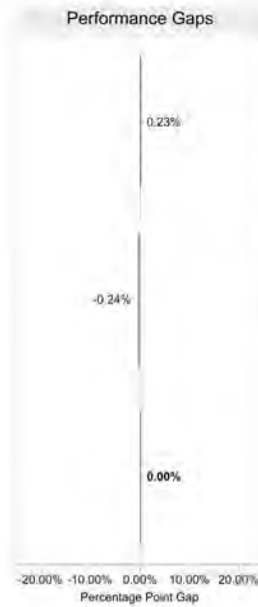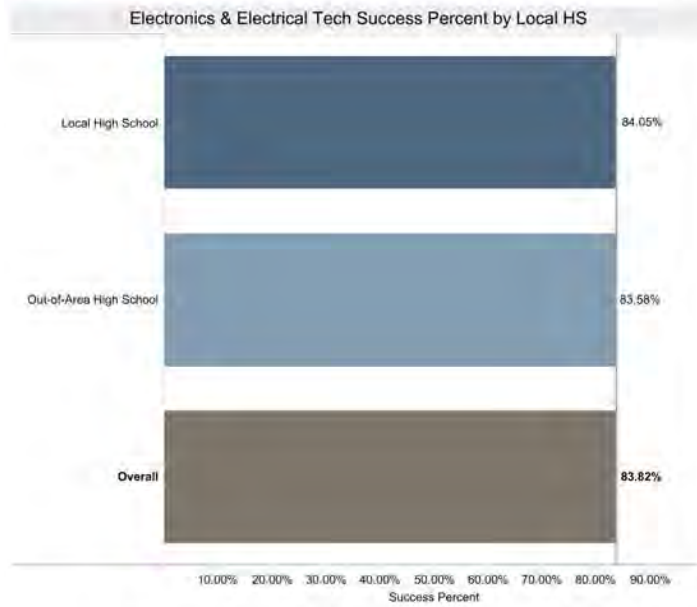Dual Enrollment: All
Prison: Not Prison
Disaggregate By: Veteran

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Educational Goal

Educational Goal	Success Percent	Performance Gap
4-year college student taking courses to meet 4-year colleg..	77.27%	-6.55%
Advance in current job / career (update job skills)	84.09%	0.27%
Complete credits for high school diploma or GED	76.29%	-7.53%
Discover / formulate career interests, plans, goals	81.13%	-2.69%
Earn a vocational certificate without transfer	79.37%	-4.45%
Educational development (intellectual, cultural)	73.17%	-10.65%
Improve basic skills in English, reading or math	85.19%	1.36%
Maintain certificate or license (e.g. Nursing, Real Estate)	82.05%	-1.77%
Obtain a 2-year associate degree without transfer	89.51%	5.69%
Obtain an associate degree and transfer to a four-year institution	84.84%	1.02%
Prepare for a new career (acquire job skills)	91.10%	7.27%
Transfer to a 4-year institution without an associate degree	86.27%	2.45%
Uknown/Unreported	91.30%	7.48%
Undecided on goal	83.41%	-0.41%
Overall	83.82%	0.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Successful Course Completion by Student Subpopulation

Electronics & Electrical Tech Success Percent by Local HS

Local HS	Success Percent	Performance Gap
Local High School	84.05%	0.23%
Out-of-Area High School	83.58%	-0.24%
Overall	83.82%	0.00%

Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Other Relevant Program Data (optional)

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

California Department of **Industrial Relations**

Labor Commissioner's Office | List of approved schools

List of approved schools

147 Cuesta College - Open to the public

Approved to Offer Whole General Electrician Curriculum

San Luis Obispo County

P.O. Box 8106

San Luis Obispo, CA 93403

Phone (805) 546-3264

Fax (805) 546-3963

Contacts: John Cascamo (Administrator), john_cascamo@cuesta.edu

Bret Allen (Technical), ballen@cuesta.edu

Website: www.cuesta.edu

Start your
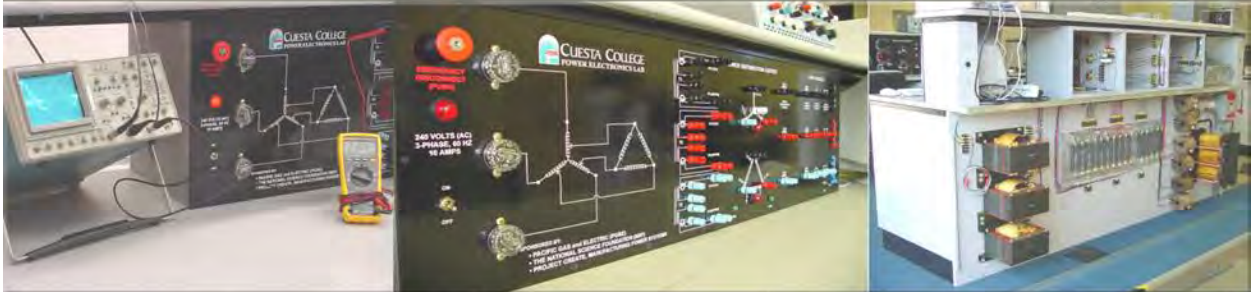**ELECTRONICS &
ELECTRICAL TECHNOLOGY**
career
@ Cuesta!

Conveniently
located

CUESTA COLLEGE

Hartnell College
Cuesta College
Santa Barbara City College
133 Miles
100 Miles

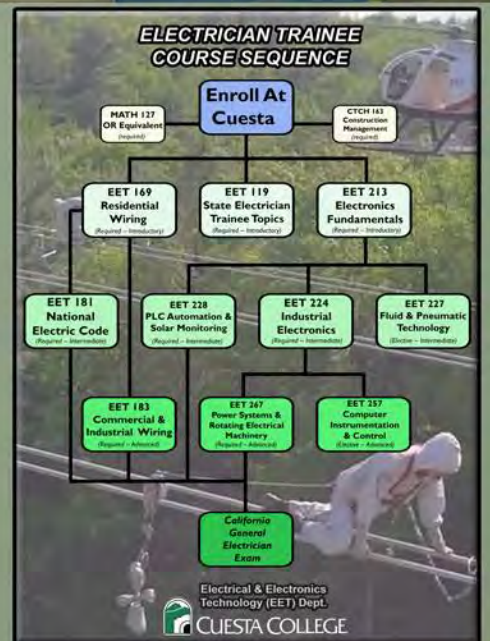Colleges With California
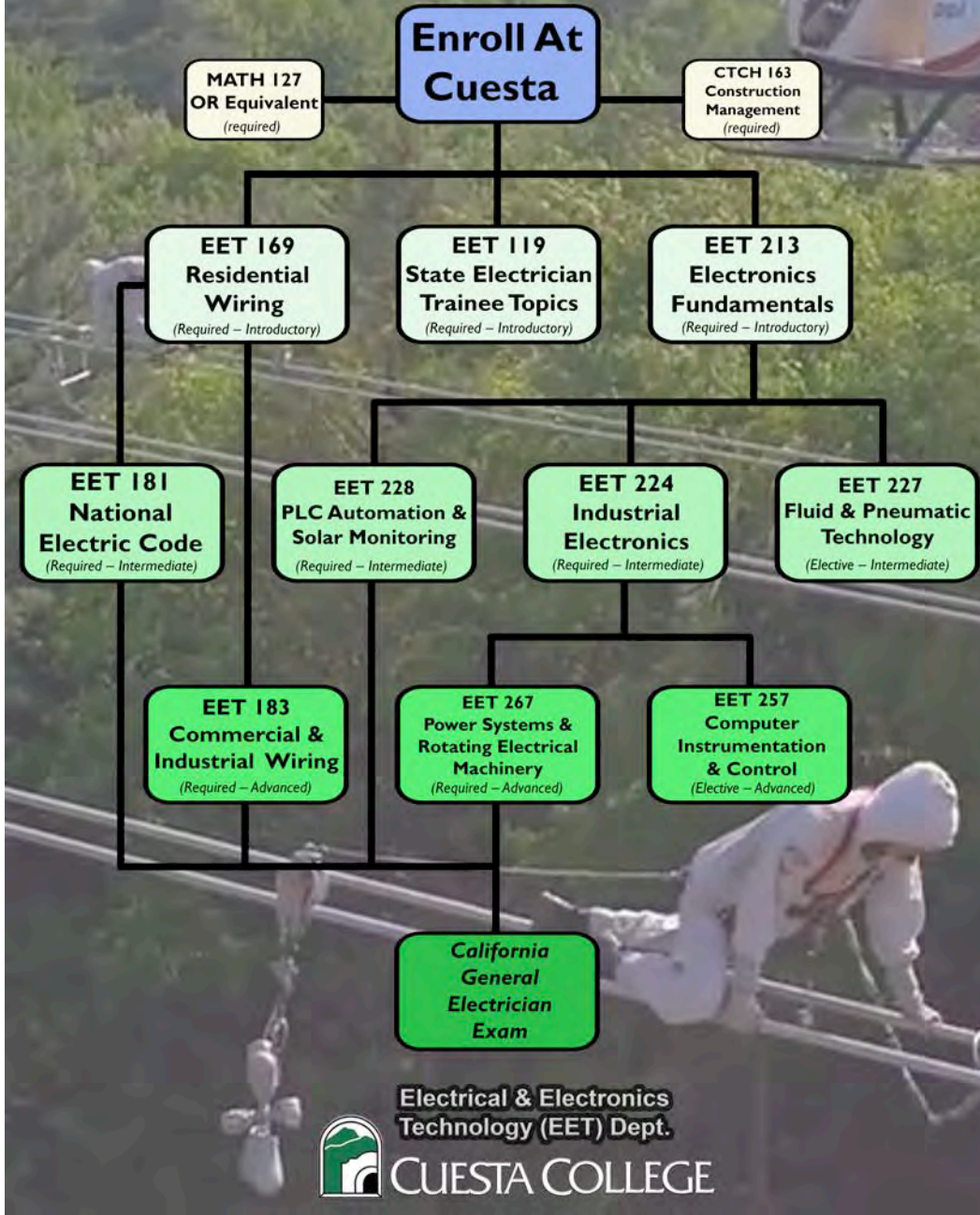State Approved Electrician Programs

Program Offerings

- A.S. IN ELECTRICAL TECHNOLOGY

- ELECTRONICS AND STATE ELECTRICIAN
  CERTIFICATE OF ACHIEVEMENT

- POWER AND INSTRUMENTATION
  CERTIFICATE OF SPECIALIZATION

Career Opportunities

- COMMERCIAL / INDUSTRIAL ELECTRICIAN
- UTILITY LINE WORKER
- SOLAR TECHNICIAN / ELECTRICIAN
- UTILITY EMERGENCY SERVICE TECHNICIAN
- ELECTRICAL FOREMAN / SUPERINTENDANT
- AND MANY MORE

ELECTRICIAN TRAINEE COURSE SEQUENCE

MATH 127 OR Equivalent *(required)*

Enroll At Cuesta

CTCH 163 Construction Management *(required)*

EET 169 Residential Wiring *(Required – Introductory)*

EET 119 State Electrician Trainee Topics *(Required – Introductory)*

EET 213 Electronics Fundamentals *(Required – Introductory)*

EET 181 National Electric Code *(Required – Intermediate)*

EET 228 PLC Automation & Solar Monitoring *(Required – Intermediate)*

EET 224 Industrial Electronics *(Required – Intermediate)*

EET 227 Fluid & Pneumatic Technology *(Elective – Intermediate)*

EET 183 Commercial & Industrial Wiring *(Required – Advanced)*

EET 267 Power Systems & Rotating Electrical Machinery *(Required – Advanced)*

EET 257 Computer Instrumentation & Control *(Elective – Advanced)*

California General Electrician Exam

Electrical & Electronics Technology (EET) Dept.

CUESTA COLLEGE

ELECTRICIAN TRAINEE
COURSE SEQUENCE

Enroll At Cuesta

MATH 127 OR Equivalent (required)

CTCH 163 Construction Management (required)

EET 169 Residential Wiring (Required – Introductory)

EET 119 State Electrician Trainee Topics (Required – Introductory)

EET 213 Electronics Fundamentals (Required – Introductory)

EET 181 National Electric Code (Required – Intermediate)

EET 228 PLC Automation & Solar Monitoring (Required – Intermediate)

EET 224 Industrial Electronics (Required – Intermediate)

EET 227 Fluid & Pneumatic Technology (Elective – Intermediate)

EET 183 Commercial & Industrial Wiring (Required – Advanced)

EET 267 Power Systems & Rotating Electrical Machinery (Required – Advanced)

EET 257 Computer Instrumentation & Control (Elective – Advanced)

California General Electrician Exam

Electrical & Electronics Technology (EET) Dept.
CUESTA COLLEGE

Sample/typical laboratory coversheet handout (Created in Photoshop for AC Electronics Fundamentals (EET-213) :

EET 213 Unit 9 Lab Coversheet

Name: _____
Date: _____

Series Resistive-Capacitive Voltage Distribution Lab

(See attachment for lab objectives and procedures)
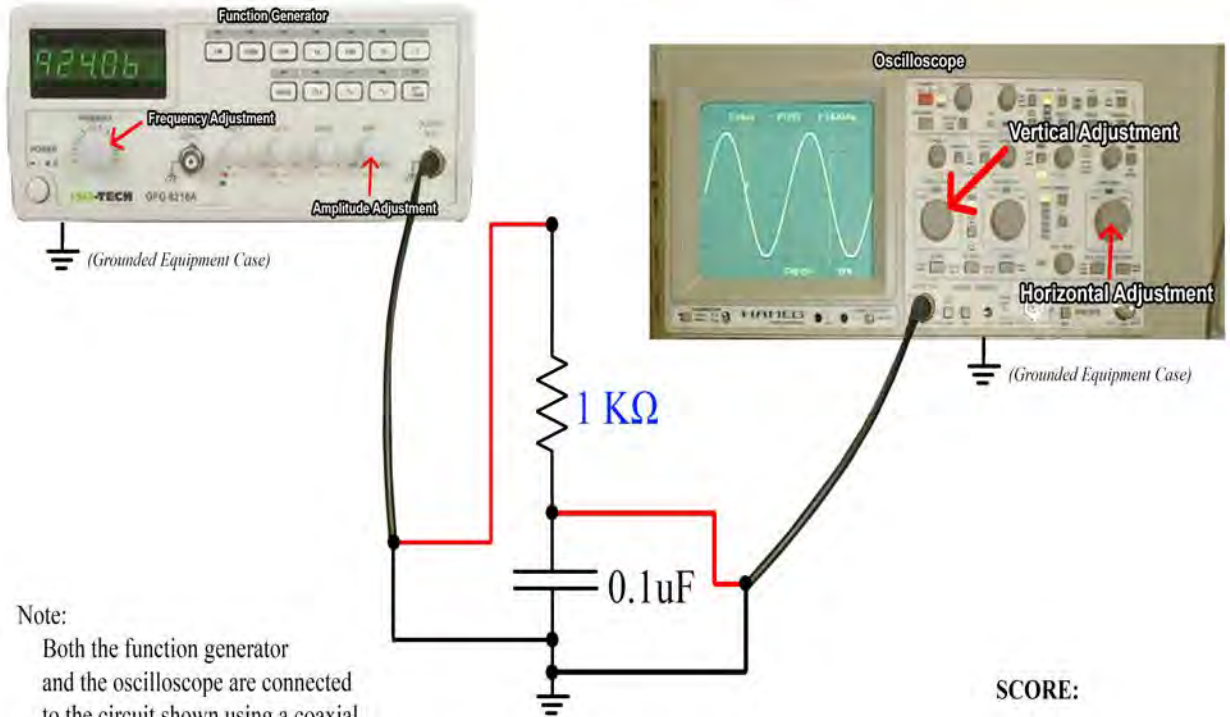
Note:
Both the function generator and the oscilloscope are connected to the circuit shown using a coaxial cable with an alligator clip breakout for positive (red) and ground (black) connections.

SCORE:

_____
(Inst. B. Allen)

45 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

E. CURRICULUM REVIEW

List all courses and degrees/certificates that have been created, modified, or deactivated (and approved by the Curriculum Committee) since the last CPPR.
Complete the Curriculum Review Template and submit the form within your CPPR.

As mentioned previously, the A.S. in Electrical Technology was modified from a dual track (electrical – nuclear) degree pattern to a single-track Electrical Technology Associate of Science Degree. This modification was approved by the curriculum committee and in the best interest of students, Industry, EET Department and community at large.

The current Single track A.S. is published in the 2022 -2023 catalog and depicted below. The dual track A.S. is subsequently depicted for comparison purposes (see the following 2-pages).

46 S a n L u i s O b i s p o C o u n t y C o m m u n i t y C o l l e g e D i s t r i c t
I n s t r u c t i o n a l C o m p r e h e n s i v e P r o g r a m P l a n n i n g & R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

ASSOCIATE DEGREE PROGRAM

Electrical Technology — Associate in Science

Required Courses (39 credits)

CTCH 163	Construction Management	3
EET 119	State Electrician Trainee Topics	4
EET 169	Residential Wiring	3
EET 181	National Electrical Code	3
EET 183	Commercial And Industrial Wiring	4
EET 213	Electronics Fundamentals	6
EET 224	Industrial Electronics	4
EET 228	PLC Automation And Solar Monitoring	4
EET 257	Computer Instrumentation And Control	4
EET 267	Power Systems And Rotating Electrical Machinery	4

Advising Note: To satisfy the Math/Analytical Thinking requirement for the General Education portion of this degree, students should choose from among Math 127, 229, 231, 242, or 265A.

Total Credits: 39

Click Here For Program Student Learning Outcomes

CERTIFICATE PROGRAMS

Electronics and State Electrician — Certificate of Achievement

Required Courses (40 credits)

CTCH 163	Construction Management	3
EET 119	State Electrician Trainee Topics	4
EET 169	Residential Wiring	3
EET 181	National Electrical Code	3
EET 183	Commercial And Industrial Wiring	4
EET 213	Electronics Fundamentals	6
EET 224	Industrial Electronics	4
EET 228	PLC Automation And Solar Monitoring	4
EET 267	Power Systems And Rotating Electrical Machinery	4
MATH 127	Intermediate Algebra	5

Advising Note: Math 229, 231, 242 or 265A can be substituted for Math 127

Total Credits: 40

Click Here For Program Student Learning Outcomes

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree may differ from those needed to prepare to transfer. Students who plan to transfer to a four-year college or university should schedule an appointment with a Cuesta College counselor to develop a student education plan (SEP) before beginning their program.

TRANSFER RESOURCES:

CSU and UC Articulation Agreements and Majors Search Engine:
www.ASSIST.org
CSU System Information:
www2.calstate.edu

FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that Cuesta College offers a full array of financial aid programs—grants, work study, scholarships, federal loan programs, and fee waivers. These programs are available to both full-and part-time students who are seeking a degree or certificate. For those who qualify, financial aid is available to help with tuition, fees, books and supplies, food, housing, transportation, and childcare. Please log onto our website for additional information:
www.cuesta.edu/student/studentservices/finaid

[DEACTIVATED Dual Tract Electrical Technology A.S. (for comparison purposes only)](#)

Required Courses (14 credits)		Units
EET 213	ELECTRONICS FUNDAMENTALS	6
EET 224	INDUSTRIAL ELECTRONICS	4
EET 267	POWER SYSTEMS AND ROTATING ELECTRICAL MACHINERY	4

Choose one of the following tracks :

Electrical Technology Track (17 credits)		Units
CTCH 163	CONSTRUCTION MANAGEMENT	3
EET 169	RESIDENTIAL WIRING	3
EET 181	NATIONAL ELECTRICAL CODE	3
EET 183	COMMERCIAL AND INDUSTRIAL WIRING SYSTEMS	4
EET 228	PLC AUTOMATION AND SOLAR MONITORING	4

Nuclear Maintenance Track (22 credits)		Units
EET 227	FLUID AND PNEUMATIC TECHNOLOGY	4
EET 257	COMPUTER INSTRUMENTATION AND CONTROL	4
EET 270	NUCLEAR POWER PROCESSES FOR TECHNICIANS	3
EET 271	NUCLEAR POWER FUNDAMENTALS	3
EET 272	NUCLEAR SYSTEMS MAINTENANCE I	4
EET 273	NUCLEAR SYSTEMS MAINTENANCE II	4

Total Units	**31 - 36**

Completing the template will provide evidence that the curriculum (including course delivery modalities) has been carefully reviewed during the past five years for currency in teaching practices, compliance with current policies, standards, regulations, and with advisory committee input. The form requires you to include evidence that the following entries on the course outline of record (CurricUNET format) are appropriate and complete:

CURRICULUM REVIEW GUIDE and WORKSHEET

Courses and Programs

Current Review Date: 2-2022

Reviewer: Bret Allen

1. Courses

- List all courses, which were active in your program at the time of the last CPPR.

48 S a n L u i s O b i s p o C o u n t y C o m m u n i t y C o l l e g e D i s t r i c t
I n s t r u c t i o n a l C o m p r e h e n s i v e P r o g r a m P l a n n i n g & R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

- Review the current CurricUNET Course Outline of Record (COR) for each course and indicate yes/no for each column below.
- For each new, modified, and deactivated course provide the effective term posted on CurricUNET.

Course (Prefix / Number)	Currently active	New course since last CPPR	Major modification since last CPPR	Minor modification since last CPPR	Deactivated since last CPPR Notified impacted program(s)*
EET-113	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-119	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-169	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-181	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-183	**yes** / no	**no** / yes: date	no / **yes:** date: **9-2016**	**no** / yes: date	**no** / yes: date
EET-213	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	no / yes: date
EET-224	**yes** / no	**no** / yes: date	no / **yes:** date: **9-2016**	**no** / yes: date	**no** / yes: date
EET-227	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-228	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date

EET-257	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-267	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date	**no** / yes: date
EET-270,271, 272 & 273	yes / **no**	**no** / yes: date	**no** / yes: date	**no** / yes: date	no / **yes:** date:**10-2021**

*Note: Please state if the deactivated course impacted any other program(s) and if and when the affected program(s) was/were notified:

Deactivated Courses	Impacted Program (s)	Date affected program was notified
EET-270,271, 272 & 273 (All nuclear related)	Electrical Technology (EET) – Impacted "Nuclear Track" **ONLY**	September - 2021

2. Course Review

- Please review the current CurricUNET CORs for all active courses in your program for currency and accuracy and annotate the items below.
- If you find any mistakes in the CORs (e.g. non-content related items such as typos), contact the Curriculum Chair or Curriculum Specialist for correction.
- All other changes require either a minor or major modification. Your curriculum representative will assist you.
- Some modifications need to be processed in the current term (see annotations # 2 and #3 below).
- Some modifications can be done over the period of the next five years (see annotation #1 below).
- Indicate on the Five-Year Cycle Calendar below when a minor or major modification will be submitted.

Note: *All EET courses were modified for DE (Hybrid or Blended) offerings via Curriculum Committee Fast-track spreadsheet because of COVID-19 pandemic (similar to most CTE and other programs).*

	Course Number	"N/A"			
1.	Effective term listed on COR	Date: **All up to date**	Date: **"N/A"**	Date: **"N/A"**	Date: **"N/A"**
2.	Catalog / schedule description is appropriate	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
3.	Pre-/ co-requisites / advisories (if applicable) are appropriate	**yes** / no[2]	yes / no[2]	yes / no[2]	yes / no[2]
4.	"Approved as Distance Education" is accurate (and new addendum complete)	**yes** / no[4]	yes / no[4]	yes / no[4]	yes / no[4]
5.	Grading Method is accurate	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
6.	Repeatability is zero	**yes** / no[4]	yes / no[4]	yes / no[4]	yes / no[4]
7.	Class Size is accurate	**yes** / no[2]	yes / no[2]	yes / no[2]	yes / no[2]
8.	Objectives are aligned with methods of evaluation	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
9.	Topics / scope are aligned with objectives	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
10.	Assignments are aligned with objectives	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
11.	Methods of evaluation are appropriate	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]
12.	Texts, readings, materials are dated within last 5 years	**yes** / no[3]	yes / no[3]	yes / no[3]	yes / no[3]
13.	CSU / IGETC transfer & AA GE information (if applicable) is correct	**yes** / no[4]	yes / no[4]	yes / no[4]	yes / no[4]
14.	Degree / Certificate information (if applicable) is correct	**yes** / no[4]	yes / no[4]	yes / no[4]	yes / no[4]
15.	Course Student Learning Outcomes are accurate	**yes** / no[4]	yes / no[4]	yes / no[4]	yes / no[4]
16.	Library materials are adequate and current *	**yes** / no[1]	yes / no[1]	yes / no[1]	yes / no[1]

A. [1] If no, a major modification is needed within the next 5 years (see five-year cycle calendar). – *New calander is inserted into CPPR as required / specified.* **Under:** PROGRAM OUTCOMES, ASSESSMENT AND IMPROVEMENTS

"(See next CPPR section for new Calander)"

[2] If no, a major modification is needed in the current term. (For increase in class size, see your curriculum representative for details.)

[3] If no, a minor modification is needed in the current term. I

[4] If no, contact the Curriculum Chair or Curriculum Specialist.

3. Programs

- List all programs/certificates that were active at the time of the last CPPR.
- Review the CurricUNET "Program of Study" outline and indicate yes/no for each program/certificate.
- For each deactivated program provide the effective term posted on CurricUNET.

Program / Certificate Title	Currently active	New program since last CPPR	Program modification since last CPPR	Deactivated since last CPPR
Electrical Technology Associate in Science	**yes** / no	**no** / yes: date	no / **yes:** date: 11-2021	**no** / yes: date
Electrical and State Electrician C.A.	**yes** / no	**no** / yes: date	no / **yes:** date: 11-2021	**no** / yes: date
Power and Instrumentation C.A.	**yes** / no	**no** / yes: date	**no** / yes: date	**no** / yes: date
Nuclear Energy Systems C.A.	yes / **no**	**no** / yes: date	no / **yes:** date 11-2021	no / **yes:** date 11-2021

4. Program Review

- Review the CurricUNET "Program of Study" outline for each active program/certificate and indicate yes/no for each column below.

Currently active Program / Certificate: Title	Required courses and electives, incl. course numbers, course titles, and course credits, are accurate	Program description is current	Program Learning Outcomes are accurate and include method of assessment
Electrical Technology Associate in Science	**yes** / no*	**yes** / no*	**yes** / no**
Electrical and State Electrician C.A.	**yes** / no*	**yes** / no*	**yes** / no**
Power and Instrumentation C.A.	**yes** / no*	**yes** / no*	**yes** / no**

* If not, program modification is needed.

** If not, Program Learning Outcomes modification is needed.

5. Five-Year Cycle Calendar

- During the following five-year cycle all aspects of the course outline of record and program curriculum will be reviewed for currency, quality, and appropriate CurricUNET format.
- Indicate if a course needs a major or minor modification based on the current course review. Your curriculum representative will assist you.
- When submitting a major or minor modification, please enter or update the Student Learning Outcomes for each course.

COURSES

"N/A" – However additional review will be conducted over next cycle*.

Course Number	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
"N/A" *		major / minor	major / minor	major / minor	major / minor	major / minor	major / minor	major / minor	major / minor	major / minor

cm revised 11/08/16

54 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

B. PROGRAM OUTCOMES, ASSESSMENT AND IMPROVEMENTS

Attach or insert the assessment calendar for your program for the next program review cycle.

<u>Electronic & Electrical Technology (EET) Department</u>

Program Revised Assessment Calendar

Revised Spring 2021 (4 Year Cycle)

Cycle Stage	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023
SLO Assessment	EET 228	EET 119 & EET 213	EET 183 & EET 267	EET 224 & EET 257	EET 169, EET 227, EET 181
Analyze Results & Develop Plan Improvements	EET 169, EET 227, EET 181	EET 228	EET 119 & EET 213	EET 183 & EET 267	EET 224 & EET 257
Plan Implementation	EET 224 & EET 257	EET 169, EET 227, EET 181	EET 228	EET 119 & EET 213	EET 183 & EET 267

Cycle Stage	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
SLO Assessment	EET 228	EET 119 & EET 213	EET 183 & EET 267	EET 224 & EET 257	EET 169, EET 227, EET 181
Analyze Results & Develop Plan Improvements	EET 169, EET 227, EET 181	EET 228	EET 119 & EET 213	EET 183 & EET 267	EET 224 & EET 257
Plan Implementation	EET 224 & EET 257	EET 169, EET 227, EET 181	EET 228	EET 119 & EET 213	EET 183 & EET 267

Have you completed all course assessments in eLumen? If no, explain why you were unable to do so during this program review cycle and what plan(s) exist for completing this in the next program review cycle. And I

All course assessments were completed in Elumen with the exception of EET 224, EET 181, and EET 227 due to adjunct faculty familiarity with Elumen as well CCFT contract change. Between the COVID-19 pandemic, the learning curve associated with the online LMS transition for adjunct faculty without DE background or DE/online certification, and the lack of in-person Elumen training resources during the COVID-19 pandemic contributed to a lack of Elumen assessment data on the part of select adjunct faculty.

The plan for completion of all assessment in Elumen in the next program review cycle is to ensure all adjunct faculty are proficient with Elumen and held accountable for inputting data and analysis. Better and more frequent communication will be made with faculty regarding the importance of Elumen assessments and the timeliness of inputting assessment data and instructor analysis.

It should be noted that only instructors of record have administrative access to input Elumine data for course(s) they teach.

Include the most recent "PLO Summary Map by Course" from eLumen which shows the Course-level SLOs mapped to the Program-level SLOs.

- **PLO Summary Map by Course from eLumen -**
  Note: Brouser screenshot condensed map

Bret Allen as Department Coordinator ▾ in Electronics & Electrical Tech ▾

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Strategic Planning | Outcomes & Assessments | Org Management | Reports

Outcomes Listing | Curriculum Map | Outcomes Groups | Assessments

Mapping source
SLOs

Organization	Outcomes Groups	Terms	Programs	Program Information
Electronics & Ele... ▾	- No Outcomes Group selected - ▾	Current ▾	CA_ELECT_ST ▾	Active since 8/2015

	Apply fundamental principles of mathematics, physics and chemistry to electrical and mechanical theory and problem solving.	Develop broad based fundamental technical skill sets that will allow the technician to adapt to many jobs and changing...	Develop broad electrical and electronic technical skills and competencies as required by the State Electrician Certification...	Display traits of hard work, self-motivation, personal integrity, and positive attitude that will contribute to the success of...	Utilize theory and basic skill sets for operating, maintaining, and troubleshooting relevant applications and specific...
CA_ELECT_ST ▾					
Courses ▾					
CA_ELECT_ST ▾					
☐ Include Inactive Courses					
CTCH163 Construction Mgmt Active since 8/2015					
Student will achieve entry level familiarity with evaluation of structure... Active since 1/2019		✔	✔		
Student will have a general understanding of legal requirements inclusive of... Active since 1/2019					✔
Student will have entry skill sets in soft skills, subcontractor scheduling and... Active since 1/2019	✔			✔	✔
CTCH169 Residential Wiring Active since 8/2015					
Understand and communicate the Power Grid, Energy Costs, Electrical Math and... Active since 8/2015	✔		✔		
Demonstrate the proper tools and techniques to install all common circuits. Active since 8/2015		✔	✔		✔
Apply electrical theory, residential electrical code understanding, and... Active since 8/2015		✔	✔		✔
CTCH181 NATIONAL ELECTRICAL CODE Active since 8/2015					
visit historical significance of building codes Active since 8/2015			✔		
determine Electrical code is oldest code adopted in the U.S. Active since 8/2015	✔		✔		
determine Electricity is essential to our environment, is safe when installed... Active since 8/2015	✔		✔		✔
CTCH183 Comm. and Indust. Wiring Syste Active since 8/2015					
Understand safety, power distribution, and raceways in a commercial building. Active since 8/2015			✔		✔
Demonstrate the proper tools and techniques to install all branch circuits... Active since 8/2015	✔	✔	✔		
Understand and communicate the power grid, efficient retrofitting to reduce... Active since 8/2015	✔		✔		
Apply electrical theory and National Electrical Code to analyze specific branch... Active since 8/2015		✔			
EET110 State Electrician Trainee Trea Active since 8/2015					
- Identify fundamental properties of electricity. Active since 8/2015	✔		✔		
- Determine the function of voltage, current, resistance, and power in a simple... Active since 8/2015			✔		✔
- Identify operational characteristics, code requirements, system maintenance,... Active since 8/2015				✔	
- Identify operational characteristics, code requirements, system maintenance... Active since 8/2015			✔		✔
- Identify the basic functional characteristics and operation of HVAC systems. Active since 8/2015	✔		✔		✔
- Describe the use of industry standard equipment and methods for... Active since 8/2015			✔		✔
- Describe the make-up and organization structure of the network cabling... Active since 8/2015		✔			✔
- Describe the economic factors, technical performance characteristics, and... Active since 8/2015			✔		✔
EET213 Elec Fundamentals Active since 8/2015					
Identify fundamental properties of electricity. Active since 8/2015	✔	✔	✔		
Determine the function of voltage, current, and resistance in a simple circuit. Active since 8/2015	✔	✔	✔		
Measure voltage, current, and resistance in terms of volts, amps, and ohms. Active since 8/2015	✔	✔	✔		
Apply the concept of alternating current to series and parallel circuits. Active since 8/2015					✔
Demonstrate the use of an Oscilloscope for AC circuit measurements. Active since 8/2015		✔		✔	
Apply concept of reactance to calculate voltage and current values in an AC... Active since 8/2015			✔		✔
EET228 PLC Automation Active since 8/2015					
Utilize electronic theory for proper PLC device selection, and test. Active since 8/2019	✔		✔		
Configure and install PLC modules and wiring to create operational circuits Active since 8/2015					✔
Investigate how PLC's fit within industrial and commercial automation systems Active since 8/2015			✔		
Discuss the major sections of the PLC system Active since 8/2015		✔			
Select standard input and output devices that connect to PLC's to match system... Active since 8/2015			✔		✔
Wire PLC circuits and Program PLC processor to perform automation tasks Active since 8/2015			✔		
Test PLC circuits and debug PLC programs using logical troubleshooting... Active since 8/2015					✔
EET267 Power Sys & Elect Mach Active since 8/2015					
- Analyze and troubleshoot rotating electrical machinery Active since 8/2015	✔	✔			✔
- Discuss AC and DC machine fundamentals and principles Active since 8/2015	✔	✔	✔	✔	
- Describe AC and DC motors and generators Active since 8/2015	✔	✔	✔	✔	
- Analyze and troubleshoot power transformers' Active since 8/2015	✔	✔	✔		✔
- Explain power and instrumentation transformer basics Active since 8/2015	✔	✔	✔		✔
- Describe, investigate and troubleshoot three phase transformers Active since 8/2015	✔	✔	✔		✔
- Analyze and troubleshoot power drawings and circuit diagrams Active since 8/2015	✔	✔	✔		✔
- Analyze and troubleshoot grounding, cabling, and conduit Active since 8/2015	✔	✔	✔		✔
MATH127 Inter. Algebra Active since 8/2015					
Perform operations and solve equations involving expressions at the... Active since 8/2015	✔				
Identify key words and interpret their meaning to model and solve applications... Active since 8/2015	✔		✔		
Graph exponential, logarithmic, and quadratic functions and analyze graphs to... Active since 8/2015	✔				

Bret Allen as Department Coordinate ∨ in Electronics & Electrical Tech ∨ · Inbox · Account Settings · Support · Log Out

Strategic Planning | Outcomes & Assessments | Org Management | Reports

Outcomes Listing · Curriculum Map · Outcomes Groups · Assessments

Mapping source
SLOs

Organization	Outcomes Groups	Terms	Programs	Program Information
Electronics & Ele... ▾	- No Outcomes Group selected - ▾	Current ▾	CS_PWR_/_INS ▾	Active since 8/2015

CS_PWR_/_INS ▾ / Courses ▾ / CS_PWR_/_INS ▾ ☐ Include inactive Courses	Apply fundamental principles of mathematics, physics and chemistry to electrical and mechanical theory and problem solving	Display traits of hard work, self-motivation, personal integrity, and positive attitude that will contribute to the success of...	Utilize theory and basic skill sets for operating, maintaining, and troubleshooting relevant applications and specific...
EET227 Fluid Tech Active since 8/2015			
- Analyze fluid hydraulic and pneumatic systems. Active since 8/2015	✓		✓
- Calculate hydraulic and pneumatic flow and pressure. Active since 8/2015	✓		✓
- Examine various kinds of hydraulic pumps positive and non-positive... Active since 8/2015	✓		✓
- Demonstrate operation of various types of pressure regulators. Active since 8/2015	✓		✓
EET228 PLC Automation Active since 8/2015			
Utilize electronic theory for proper PLC device selection, and test... Active since 8/2015	✓		
Configure and install PLC modules and wiring to create operational circuits Active since 8/2015			✓
Investigate how PLC's fit within industrial and commercial automation systems Active since 8/2015		✓	✓
Discuss the major sections of the PLC system Active since 8/2015			
Select standard input and output devices that connect to PLC's to match system... Active since 8/2015			✓
Wire PLC circuits and Program PLC processor to perform automation tasks Active since 8/2015			✓
Test PLC circuits and debug PLC programs using logical troubleshooting... Active since 8/2015			✓
EET257 Comp Instr and Control Active since 8/2015			
- Describe temperature sensors and their applications Active since 8/2015	✓		✓
- Analyze and troubleshoot pressure sensors Active since 8/2015			
- Analyze and troubleshoot level sensors. Active since 8/2015	✓		✓
- Discuss principles and operations of instrumentation amplifiers. Active since 8/2015	✓		
EET267 Power Sys & Elect Mach Active since 8/2015			
-Analyze and troubleshoot rotating electrical machinery Active since 8/2015	✓		✓
- Discuss AC and DC machine fundamentals and principles Active since 8/2015	✓	✓	
-Describe AC and DC motors and generators Active since 8/2015		✓	
- Analyze and troubleshoot power transformers' Active since 8/2015	✓		✓
- Explain power and instrumentation transformer basics. Active since 8/2015			✓
- Describe, investigate and troubleshoot three phase transformers Active since 8/2015	✓	✓	
- Analyze and troubleshoot power drawings and circuit diagrams Active since 8/2015			✓
- Analyze and troubleshoot grounding, cabling, and conduit Active since 8/2015			✓

Include the most recent "ILO Summary Map by Course" from eLumen that shows the Course-level SLOs mapped to the Institutional Learning Outcomes.

For full list of ILOs and mapping, please see Elumen database due to document spatial restrictions. All applicable rows are listed beginning on the following page however only the first five ILO's (columns) are shown in this document due to extensive number of ILO's and space restrictions. Elumine database contains full list of ILO's and mapping.

Please refer to the following three pages:

59 S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
I n s t r u c t i o n a l   C o m p r e h e n s i v e   P r o g r a m   P l a n n i n g   &   R e v i e w
Approved by Academic Senate April 26, 2018 Document to be Used for Submission Spring, March 7, 2022

eLumen

Brett Allen as   Department Coordinator ▾   in   Electronics & Electrical Tech   ▾

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Curriculum Listing   Curriculum Map   Outcomes Groups   Assessments

Mapping source
SLOs

Organization	Outcomes Groups	Terms	Programs
Electronics & Ele... ▾	- No Outcomes Group selected - ▾	All ▾	- No Program selected - ▾

Core ILOs ▾	Artistic and Cultural Knowledge and Engagement		Critical Thinking and Communication		Personal, Ass...
- All Categories - ▾	Identify, create, or critique key elements of inspirational art forms	Demonstrate knowledge of and sensitivity to diverse groups and cultures through studying the world's languages, societies, and...	Analyze and evaluate their own thinking processes and those of others	Communicate and interpret complex information in a clear, ethical, and logical manner	Recognize, assess, and demonstrate the skills and behaviors that promote academic and professional development >
Courses ▾					
AS_ELEC_TECH ▾					
☐ Include Inactive Courses					
CTCH163 Construction Mgmt Active since 8/2015					
Student will achieve entry level familiarity with evaluation of structure. Active since 1/2015					
Student will have a general understanding of legal requirements inclusive of... Active since 1/2015				✓	✓
Student will have entry skill sets in soft skills, subcontractor scheduling and... Active since 1/2015				✓	✓
CTCH169 Residential Wiring Active since 8/2015					
Understand and communicate the Power Grid, Energy Costs, Electrical Math and... Active since 8/2015				✓	
Demonstrate the proper tools and techniques to install all common circuits... Active since 8/2015					✓
Apply electrical theory, residential electrical code understanding, and... Active since 8/2015					
CTCH171 NATIONAL ELECTRICAL CODE Active since 8/2015					
visit historical significance of building codes Active since 8/2015					✓
determine Electrical code is oldest code adopted in the U.S. Active since 8/2015					✓
determine Electricity is essential to our environment, is safe when installed... Active since 8/2015					✓
CTCH183 Comm. and Indust. Wiring System Active since 8/2015					
Understand safety, power distribution, and raceways in a commercial building. Active since 8/2015					✓
Demonstrate the proper tools and techniques to install all branch circuits... Active since 8/2015					
Understand and communicate the power grid, efficient retrofitting to reduce... Active since 8/2015					✓
Apply electrical theory and National Electrical Code to analyze specific branch... Active since 8/2015					
EET119 State Electrician Trainee Type Active since 8/2015					
- Identify fundamental properties of electricity. Active since 8/2015					
- Determine the function of voltage, current, resistance, and power in a simple... Active since 8/2015					
- Identify operational characteristics, code requirements, system maintenance... Active since 8/2015					✓
- Identify operational characteristics, code requirements, system maintenance... Active since 8/2015					
- Identify the basic functional characteristics and operation of HVAC systems. Active since 8/2015					
- Describe the use of industry standard equipment and methods for... Active since 8/2015				✓	✓
- Describe the make-up and organization structure of the network cabling... Active since 8/2015				✓	✓
- Describe the economic factors, technical performance characteristics, and... Active since 8/2015					✓
EET213 Elec Fundamentals Active since 8/2015					
Identify fundamental properties of electricity. Active since 8/2015					
Determine the function of voltage, current, and resistance in a simple circuit. Active since 8/2015				✓	
Measure voltage, current, and resistance in terms of volts, amps, and ohms. Active since 8/2015					
Apply the concept of alternating current to series and parallel circuits. Active since 8/2015					
Demonstrate the use of an Oscilloscope for AC circuit measurements. Active since 8/2015				✓	✓
Apply concept of reactance to calculate voltage and current values in an AC... Active since 8/2015					
EET229 PLC Automation Active since 8/2015					
Utilize electronic theory for proper PLC device selection, and test... Active since 8/2015					
Configure and install PLC modules and wiring to create operational circuits Active since 8/2015					
Investigate how PLC's fit within industrial and commercial automation systems Active since 8/2015					
Discuss the major sections of the PLC system Active since 8/2015				✓	✓
Select standard input and output devices that connect to PLC's to match system... Active since 8/2015					
Wire PLC circuits and Program PLC processor to perform automation tasks. Active since 8/2015					
Test PLC circuits and debug PLC programs using logical troubleshooting... Active since 8/2015				✓	
EET287 Power Sys & Elect Mach Active since 8/2015					
- Analyze and troubleshoot rotating electrical machinery Active since 8/2015					
- Discuss AC and DC machine fundamentals and principles Active since 8/2015				✓	✓
- Describe AC and DC motors and generators Active since 8/2015				✓	✓
- Analyze and troubleshoot power transformers' Active since 8/2015					
- Explain power and instrumentation transformer basics Active since 8/2015				✓	✓
- Describe, investigate and troubleshoot three phase transformers Active since 8/2015				✓	
- Analyze and troubleshoot power drawings and circuit diagrams Active since 8/2015					
- Analyze and troubleshoot grounding, cabling, and conduit Active since 8/2015					

Instructional Comprehensive Program Planning & Review
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Strategic Planning | Outcomes & Assessments | Org Management | Reports

Outcomes Listing   Curriculum Map   Outcomes Groups   Assessments

Mapping source
SLOs

Organization	Outcomes Groups	Terms	Programs
Electronics & Ele... ⌄	- No Outcomes Group selected - ⌄	Current ⌄	- No Program selected - ⌄

	Artistic and Cultural Knowledge and Engagement		Critical Thinking and Communication		Personal, Aca
Core ILOs ⌄					
- All Categories - ⌄	Identify, create, or critique key elements of inspirational art forms	Demonstrate knowledge of and sensitivity to diverse groups and cultures through studying the world's languages, societies, and...	Analyze and evaluate their own thinking processes and those of others	Communicate and interpret complex information in a clear, ethical, and logical manner	Recognize, assess, and demonstrate the skills and behaviors that promote academic and professional development >
Courses ⌄					
CS_PWR_/_INS ⌄					
☐ Include Inactive Courses					
EET227 Fluid Tech Active since 8/2015					
- Analyze fluid hydraulic and pneumatic systems. Active since 8/2015					✔
- Calculate hydraulic and pneumatic flow and pressure. Active since 8/2015					✔
- Examine various kinds of hydraulic pumps positive and non-positive... Active since 8/2015					✔
- Demonstrate operation of various types of pressure regulators. Active since 8/2015					
EET228 PLC Automation Active since 6/2015					
Utilize electronic theory for proper PLC device selection, and test... Active since 8/2015					
Configure and install PLC modules and wiring to create operational circuits Active since 8/2015					
Investigate how PLC's fit within industrial and commercial automation systems Active since 8/2015					
Discuss the major sections of the PLC system Active since 8/2015				✔	✔
Select standard input and output devices that connect to PLC's to match system... Active since 8/2015					
Wire PLC circuits and Program PLC processor to perform automation tasks Active since 8/2015					
Test PLC circuits and debug PLC programs using logical troubleshooting... Active since 8/2015				✔	
EET257 Comp Instr and Control Active since 8/2015					
- Describe temperature sensors and their applications Active since 8/2015					✔
- Analyze and troubleshoot pressure sensors Active since 8/2015					
- Analyze and troubleshoot level sensors. Active since 8/2015					
- Discuss principles and operations of instrumentation amplifiers. Active since 8/2015					✔
EET267 Power Sys & Elect Mach Active since 8/2015					
-Analyze and troubleshoot rotating electrical machinery Active since 8/2015					
- Discuss AC and DC machine fundamentals and principles Active since 8/2015				✔	✔
-Describe AC and DC motors and generators Active since 8/2015				✔	✔
- Analyze and troubleshoot power transformers' Active since 8/2015					
- Explain power and instrumentation transformer basics Active since 8/2015				✔	✔
- Describe, investigate and troubleshoot three phase transformers Active since 8/2015				✔	
- Analyze and troubleshoot power drawings and circuit diagrams Active since 8/2015					
- Analyze and troubleshoot grounding, cabling, and conduit Active since 8/2015					

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Highlight changes made at the course or program level that have resulted from SLO assessment. Please include the evidence of dialog that prompted these changes.

Respondent	Course	Section	Organization	Date	Activity	Highlight
Allen, Bret	EET119 - State Electrician Trainee Tpcs	33175	Electronics & Electrical Tech	11-11-2019	EET 119 Final Exam	

What is your analysis of the assessment procedure and results, in light of previous improvement plans (if applicable).	For spring 2018 all student learning outcomes for EET-119 for or above 85% overall. Students were offered access to the general electrician state exam preparation material on canvas. Early exposure to his preparation material should better prepare students to achieve industry-standard performance throughout the rest of the curriculum as well as begin early preparation for the state electrician exam.	★

Respondent	Course	Section	Organization	Date	Activity	Highlight
Allen, Bret	EET183 - Comm and Indust Wiring Sys	33881	Electronics & Electrical Tech	11-14-2019	EET 183 Midterm & Final	

What is your analysis of the assessment procedure and results, in light of previous improvement plans (if applicable).	SLOs show outstanding results from students. No recommendations for improvement at this time.	★

Respondent	Course	Section	Organization	Date	Activity	Highlight
Allen, Bret	EET213 - Elec Fundamentals	72486	Electronics & Electrical Tech	11-10-2019	EET 213 Midterm & Final Exam	

What is your analysis of the assessment procedure and results, in light of previous improvement plans (if applicable).	1. Satisfactory compliance with the Division of Apprenticeship Standards core competencies for the state electrician trainee program were satisfied by all students who passed the course for SLOs 1-6. 2. Students are performing up to standard as reflected in the assessment results summary. 3. The electrical and electronic technology (EET) program is dominated by students seeking to obtain their state electrician training certification. Upon initial enrollment in the EET program, all students in good standing are qualified to obtain their state electrician trainee certification card. Under section 800.5 of the California labor code this entitles students to legally work for any licensed electrical contractor in the state of California. Upon completion of the Certificate of Achievement in electrical technology all students are qualified to sit for the California general electrician certification exam. As of this assessment, all students who have completed the requirements to sit for the mentioned general electrician certification exam have passed the exam on their first attempt. This result is based on feedback from students who took the exam to faculty. There may be some students who have not reported their results. Note: SLO # 2 & 3 Decreased to 75% respectively. There will be additional offices placed on SLO's 2 & 3 through checks for understanding as well as laboratories to affect an improvement in student performance with the student learning outcomes moving forward.	★

Respondent	Course	Section	Organization	Date	Activity	Highlight
Allen, Bret	EET257 - Comp Instr and Control	31963	Electronics & Electrical Tech	11-11-2019	EET 257 Canvas LMS SLO Assessment	

What is your analysis of the assessment procedure and results, in light of previous improvement plans (if applicable).	For spring 2018 the student learning outcomes associated with sensors and instrumentation amplifiers decreased from an overall average of 100% to 90%. The specific plan for improvement related to this 10% decrease is to add additional checks for understanding and face-to-face oral quizzes related to the topics.	★

Identify and describe any budget or funding requests that are related to student learning outcome assessment results. If applicable, be sure to include requests in the Resource Plan Worksheet.

Budget or funding requests:

Please refer to the 2022 EET Resource Plan Worksheet (Excel Unit Plan, attached to email with CPPR and CTER) for budget / funding requests in the following categories:

- Personnel Requests

- Supplies Requests

- Equipment Requests

- Facility requests

- Technology Requests

- Top 10 Priorities

Note: For each academic year during the past cycle there are detailed excel Unit Plans for each of the categories listed above (see Engineering Group Drive, et al for detailed Unit Plans.) Virtually all the budget or funding requests are directly or indirectly related to student learning outcome assessment results.

C. PROGRAM DEVELOPMENT

Indicate how the program supports efforts to achieve any of the following:

Institutional Goals and Objectives

Scheduling two or three guest speakers from industry over the term to discuss workplace standards and expectations to assist students in identifying the essential theoretical, practical, interpersonal, safety, and soft skill-sets that employers expect. Better prepare students to identify the essential axioms to best prepaire them for career and personal success. Additionally, enhance student preparation for interviews and promotions by integrating verbal quizzes during laboratory experiments. Equip students with the theoretical and practical knowledge required to answer typical Industry interview questions through verbal role-playing in conjunction with verbal Laboratory quizzes. Emphasize the importance of diversity and cultural awareness as well as soft skills, team building exercises, and interpersonal conflict resolution.

Institutional Learning Outcomes

"Same response as institutional goals and objectives (narrative above)."

Program outcomes

The EET department supports the effort to achieve program outcomes in several ways:

- Continually assessing the effectiveness of individual lesson plans in EET courses to ensure that the learning needs of all students are addressed. For example, recorded lectures for asynchronous online (hybrid or blended) courses are paced

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for the median students' learning style and speed. Recorded lectures are uploaded to the instructors YouTube channel then links to the recorded material are paste it into the Canvas LMS. Students are specifically informed that if the recorded material is beyond their speed of comprehension, they may simply slow the presentation to 0.75, etc. and/or repeat recorded material by dragging the time bar back in YouTube. For students who are above the median (or gifted) they are reminded that they can speed up recorded material by adjusting play speed to 1.5 or 2.0. Per student feedback this has shown to be effective for virtually all students. Students requiring additional one-on-one assistance are encouraged to meet in person during office hours (Covid policies permitting) and/or schedule remote Zoom meeting(s) with faculty.

- Even outside Industry advisory meetings employers are solicited for feedback on the strengths and weaknesses of working students in the EET program so that any performance deficiencies can be addressed by modifying labs and lesson plans. Depending on course(s) completed EET students should demonstrate knowledge of job applicable math skills, a general knowledge of electrical and electronic fundamentals, the ability to safely work with energized electrical circuits, electrical installations (e.g., conduit bending, wire pulling, Industry standard wire terminations, etc) as well as interpreting the National Electric Code, etc.

Indicate any anticipated changes in the following areas:

Curriculum and scheduling

Curriculum:

Since the EET program is primarily based on offering the Whole General Electrician Trainee Curriculum for students to qualify for their electrician trainee certifications and ultimately to sit for the State General Electrician Certification exam we are not expecting any immediate changes to the curriculum. With the emphasis on Green/Renewable Energy (Wind, solar, etc.) we are researching the feasibility of offering courses that could lead to additional certifications. This is still in a research phase and new curriculum would need to tie to employment opportunities in the county and the state. Also, the direction that the Diablo Canyon Nuclear Power plant (PG&E) takes during, and post decommissioning may largely influence curriculum related to wind, solar, and other forms of renewable energy. If there is a need for additional training and certifications the EET department will work in conjunction with industry and district administration to

determine how best to use available resources. One of our EET courses currently covers programmable logic controllers (PLC's) and solar energy. Many of the skill sets that are currently embedded in existing curriculum apply to the introductory and intermediate training that would be necessary for certification(s) in a variety of renewable energy technologies.

Scheduling:

Most students currently enrolled in the EET program work full or part time during the day. As such, virtually all our course offerings are in the late afternoons and evenings to accommodate student needs. We are currently in the process of interviewing candidates for an EET part time pool to have the instructional resources to address retirements and the possibility of additional certifications and curriculum. There are no immediate plans to change scheduling however should the need arise we are taking appropriate steps to have a part time faculty pool with a wide variety of experience and skill sets available.

Support services to promote success, persistence and retention

The EET Industry Advisory Committee (~47 companies / members), Cuesta Career Connections, the Cuesta Marketing Department, former EET students who have gained their electrical (C-10) contracting license and the reputation of the EET program within the community significantly promote student retention and persistence. The fact that the EET program is the only nonunion state certified curriculum within over 100 miles has historically promoted student persistence and retention. Additionally, our laboratories including the power electronics lab in room 4501D has design features and an infrastructure that is analogous to Cal Poly's and other respected 4-year institutions power electronics laboratories. We are not aware of any other California community college that has the polyphase power distribution system and controls in a laboratory that allows students to view virtually all the wiring and equipment behind plexiglass (safety grade Lucite) at every student workstation in addition to the lower end of the main panels serving the building. We attribute the foregoing in addition to the experience, education, training, and skill sets of our full-time and adjunct faculty to contribute to the long-standing success of the EET department.

Additionally, select full-time faculty members have undergone training and National Science Foundation certification developed through UCLA to mentor Industry experts without any or much teaching experience into effective, student focused EET faculty members. We believe that all of the mentioned support tools promote success, persistence, and student retention in the program.

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Facilities needs

- Dedicated room for the light board Recording studio

- Interior painting of the Power electronics lab, Room 4501D

- New carpet in the power electronics lab, Room 4501D

- Improved HVAC and local control for the power electronics lab, Room 4501D

Staffing needs/projections

Part time adjunct faculty pool for upcoming retirements and possible expansion of the program. *Note: Positions were recently requested by John Stokes (Division Chair) and human resources recently processed request and associated scheduling.*

Lastly, address any changes in strategy in response to the predicted budget and FTES target for the next program review cycle.

Recognizing that General efficiency (FTES/FTEF) for the EET program is below the overall college average, one strategy in response to the projected budget and FTES target for the next programs cycle is to recruit as many qualified adjunct faculty for the part-time EET pool as possible. Anticipating the retirement of a 25+ year full-time faculty member as well as one or more adjunct faculty members who are high on the CCFT step and column pay scale will likely reduce the FTEF denominator which should marginally improve general efficiency. Additionally, using strong workforce funds to acquire new necessary equipment to support the State certified electrician program should reduce the need for medium to higher cost equipment moving into the next program cycle.

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A. END NOTES

If applicable, you may attach additional documents or information, such as awards, grants, letters, samples, lists of students working in the field, etc.

Three letters beginning next 3-pages

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Letter / email from full-time Cuesta mathematics instructor to Division Chair and Dean

Subject: Electronics Technology Program
Date: Wednesday, May 16, 2018 at 11:23:24 AM Pacific Daylight Time
From: Greg Lewis
To: John Stokes, John Cascamo

To John Stokes:

5/16/2018

It has been on my mind for quite some time and I would like to take a moment of your time to let you know about one of the programs here at Cuesta College.

I teach Mathematics for Cuesta College and for many years I have been signing up for and taking classes here at Cuesta College. The program I am writing about is the Electronics program. I have taken almost all of the classes offered through the Electronics program at Cuesta and I wanted to express my appreciation for the opportunity to participate in these classes. I go back as far as the day when Ed English oversaw the program and I recall when Bret Allen took over after his retirement. I watched as Bret restructured the program to bring it into alignment with today's demands on our students.

Cuesta College has multiple roles and responsibilities to the community it serves, not the least of which is training a well-educated work force with technical education to meet the demand of today's workforce. The Electronics program is a fabulous example of just that. Under Bret's watch, the classes offered today meet those demands. We prepare our students for work at Diablo Nuclear Power Plant; California State's Electrical exam where students can obtain the necessary credentials to work in the construction industry; automations and electronics that abound in the industry and general knowledge that will serve them well in today's high-tech world.

In attending these classes, I got a first-hand look at several instructors as they convey the technical subject matter necessary to prepare our students. I signed-up for the classes because I wanted to become familiar with the applications that I often teach in my classes (but didn't have the practical knowledge); what I got was much more. Indeed, there were many lessons I took from those classes including ideas in teaching pedagogy, and how to work with my own students. I'm so glad that I took the time to go through these classes.

The Electronics program at Cuesta College is an incredible opportunity for our students. I welcome the opportunity to discuss my first-hand experience in this program. Thank you for your time.

Sincerely,

Greg Lewis

Mathematics

Cuesta College

glewis@cuesta.edu

CUESTA COLLEGE

October 19, 2021

Division of Labor Standards Enforcement
Electrician Unit
ATTN: Luisa Martinez
1515 Clay Street, Suite 1302
Oakland, CA 94612

Per annual request Cuesta College (School #147, Whole Provider of Electrician General Curriculum) hereby states the following:

Cuesta College will continue to offer the approved curriculum in 2021-2022 with no changes to the course offerings required to complete the program.There have been no material changes to the curriculum or program at this time.

Please feel free to contact me if you have any questions at jason_curtis@cuesta.edu or by telephone at (805) 546-3122.

Best Regards,

Assistant Superintendent,
Vice President of Instruction
Cuesta College

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Letter / email from EET Cuesta Graduate & Industry Superintendent to Division Chair

How much the Electrical program at Cuesta helped me succeed in my career!!!

○ Justin Fisher <justinkfisher1@gmail.com>   Tuesday, December 5, 2017 at 5:25 PM

To: ○ John Stokes; **Bcc:** ○ Bret Allen ⌄

Hello John,

I was told that you would be the best person to write this email too. I just want to say how amazing the program Cuesta offers for up and coming electricians. I myself, would not be in the position I am today with my career if it was for not taking the electrical program at Cuesta. The classes offered and the teachers teaching them are phenomenal and well taught.

One of my favorite classes and I think the most important class any up-and-coming electrician should take is EET 213. I gained so much knowledge from just that class alone. One off my favorite teachers would have to be Brett Allen!! He really breaks the information down so that it is understandable and retainable. I always tell Brett that his online videos are very crucial and helpful for either studying for an exam or just trying to brush up your memory.

All the classes offer are great. The hands on training and the theory behind electricity are blended into a well taught program. All in all I wanted to say thanks to Cuesta, Brett and all who made this program possible.

Thank you,

Justin Fisher
Smart72
Superintendent -Solar/Electrical
805-458-4118

B. After completing and submitting this document, please complete the Overall Program Strength and Ongoing Viability Assessment with your Dean before May 13, 2022.

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SIGNATURE PAGE

Faculty, Director(s), Manager(s), and/or Staff Associated with the Program

A. **INSTRUCTIONAL PROGRAMS: ALL FULL-TIME FACULTY IN THE PROGRAM MUST SIGN THIS FORM. IF NEEDED, PROVIDE AN EXTRA SIGNATURE LINE FOR EACH ADDITIONAL FULL-TIME FACULTY MEMBER IN THE PROGRAM.**
IF THERE IS NO FULL-TIME FACULTY ASSOCIATED WITH THE PROGRAM, THEN THE PART-TIME FACULTY IN THE PROGRAM SHOULD SIGN. IF APPLICABLE, PLEASE INDICATE LEAD FACULTY MEMBER FOR PROGRAM AFTER PRINTING HIS/HER NAME.

B. **INSTRUCTIONAL PROGRAMS: ALL FULL-TIME DIRECTOR(S), MANAGERS, FACULTY AND/OR CLASSIFIED STAFF IN THE PROGRAM MUST SIGN THIS FORM. (MORE SIGNATURE LINES MAY BE ADDED AS NEEDED.)**
John Stokes (Division Chair)

C. DIVISION CHAIR/DIRECTOR NAME	SIGNATURE	DATE
D. BRET C. ALLEN (LEAD FACULTY)		3/2/2022
E. NAME	SIGNATURE	DATE
F. CHRIS AKELIAN		
G. NAME	SIGNATURE	DATE
H. ALAN ROSS, PH.D		
I. NAME	SIGNATURE	DATE
J. MIKE FONTES		
K. NAME	SIGNATURE	DATE
L.		
M. NAME	SIGNATURE	DATE
N.		
O. NAME	SIGNATURE	DATE
P.		

SUPPLEMENTAL DOCUMENTS

FACULTY HIRING PRIORITIZATION INFORMATION (If Applicable)

If your program requested a faculty position for consideration, please attach or embed the following worksheets that were presented to the College Council. The guidelines for faculty prioritization can be found by clicking this link.

APPLICABLE SIGNATURES:

Vice President/Dean	**Date**

Division Chair/Director/Designee	**Date**

Other (when applicable)	**Date**

The above-signed individuals have read and discussed this review. The Director/Coordinator, Faculty, and staff in the program involved in the preparation of the CPPR acknowledge the receipt of a copy of the Vice President/ Dean's narrative analysis. The signatures do not necessarily signify agreement.