Opportunities for Apprenticeships in San Diego & Imperial Counties
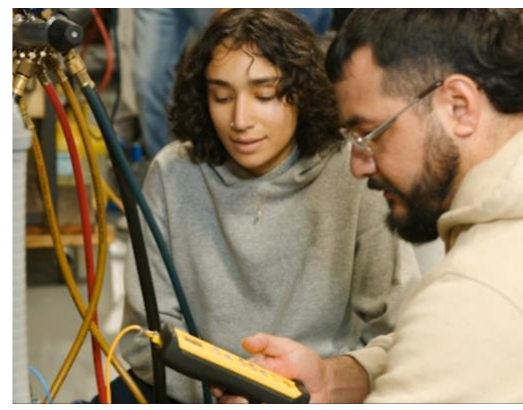
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Executive Summary

Registered apprenticeships are "earn-and-learn" training programs where participants receive classroom instruction and earn wages through on-the-job work experience. Unlike other training programs, apprentices do not accrue debt or pay for their education; these costs are covered by program sponsors or employers. Due to its importance in education and workforce development, the State of California established a goal of training 500,000 registered apprentices by 2029.[1] To help reach this goal, the San Diego-Imperial region would need to contribute 45,000 apprentices. Currently, the region has 15,806 apprentices and would need **29,194** more by 2029.[2]

To assist the region with developing registered apprenticeship programs, the San Diego & Imperial Center of Excellence (COE) examined labor market and apprenticeship data to 1) determine what registered apprenticeships exist in California and the San Diego-Imperial region; 2) examine ways the community colleges could develop more registered apprenticeship programs; and 3) identify apprenticeable, high-wage, and high-demand occupations that community colleges should target for program development.

In the current apprenticeship landscape, the Energy, Construction, & Utilities (ECU) sector has the most apprentices— consistent with historical trends. Ninety-one percent of registered apprentices in the region are male, showing a significant gender imbalance.[3] Growing the number of apprenticeships equitably means developing inclusive pre-apprenticeship programs that recruit individuals who are traditionally underrepresented, such as women in ECU or black, indigenous, and people of color (BIPOC) in Information and Communication Technologies (ICT).[4]

The best available data on apprenticeship programs is still limited. There is no centralized data source that contains apprentice headcounts, program sponsors, employers, and education providers. Gaps found in the California Division of Apprenticeship Standards (DAS) and the community college databases make a holistic understanding of active apprenticeship programs difficult. In order to maximize funding opportunities and close equity gaps, regional and state partners must consolidate relevant data sets into a user-friendly tool; collaborate with employers to develop healthy work environments for individuals traditionally underrepresented in their industries; and coordinate efforts among Local Educational Agencies (LEAs), Career Technical Education/Career Education (CTE/CE) programs, student support services[5], and employers. As part of its mission to unify the education and workforce development ecosystem, the San Diego & Imperial Regional Consortium[6] can supplement these efforts by providing intermediary services and reducing duplication of efforts among the parties involved in apprenticeship program development. To that end, the COE reviewed all **apprenticeable occupations**[7] in California and refined that list to 136 and 129 high-wage, high-demand occupations in San Diego County and Imperial County, respectively, for the region to consider (Appendix A). An "apprenticeable occupation" is an occupation that the DAS validated to be aligned with apprenticeship standards, which should help expedite the process in creating new apprenticeship programs.

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[1] "The Road to 500,000 Apprentices: Ideas for Expanding Apprenticeship in California," New America, accessed February 6, 2024, newamerica.org/education-policy/reports/road-500000-apprentices/introduction.

[2] This figure was quantified by adding amounts from DAS Registration Dashboard and DAS Completion Dashboard. See Exhibit 1.

[3] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

[4] "San Diego County," Data USA, accessed February 6, 2024, datausa.io/profile/geo/san-diego-county-ca.

[5] Also known as wraparound services, which covers basic needs for participants such as housing, food, transportation, and childcare needs.

[6] myworkforceconnection.org/about-us.

[7] "Division of Apprenticeship Standards – Educators," Department of Industrial Relations, accessed February 6, 2024, dir.ca.gov/das/educators.htm.

Introduction

Apprenticeship programs are structured "earn-and-learn" training programs that combine on-the-job work experience with classroom instruction. Once registered with the California Division of Apprenticeship Standards (DAS) and/or U.S. Department of Labor (DOL), apprenticeships are eligible for government funding. Registered apprenticeship programs must have a 1) **Local Education Agency (LEA)** and 2) **program sponsor**. LEAs are public education agencies authorized to provide **related and supplemental instruction (RSI)** for apprentices.[8] LEAs can be community colleges, adult schools, or regional occupational programs. Program sponsors provide jobs to apprentices, design and execute the program, and oversee instruction. A program sponsor is often a business or a consortium of businesses.[9]

Applicants must have a high school diploma or GED to apply. Age requirements range from 16 to 21 years old, and the program length ranges between one and six years, with four years being the general duration. Apprentices learn on the job under the guidance of an experienced professional, often referred to as a **journeyworker**. Nationally, 87 percent of apprentices obtain employment after program completion, with an average starting salary of $50,000.[10] Apprentices may also receive paid retirement or pension, college credit, or a college certificate or degree upon completion.[11] Employers also receive benefits for sponsoring apprenticeship programs. On average, for every dollar spent on apprenticeships, employers receive a return of $1.47 in increased productivity and reduced waste as a result of higher levels of employee retention, fewer recruitment expenses, and lower workers' compensation costs.[12]

To assist the region with developing registered apprenticeships that benefit students and employers, the San Diego & Imperial Center of Excellence (COE) examined existing labor market and apprenticeship data to answer the following research questions:

1. What is the apprenticeship landscape in California and the San Diego-Imperial region?

2. How can regional community colleges develop more registered apprentices and apprenticeship programs?

3. What industries or occupations should the colleges focus on?

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[8] The RSI Program provides funding that supports ongoing apprenticeship programs. The funding may be used to pay for the costs of RSI, a mandatory piece of apprenticeship programs. RSI may not be used to support pre-apprenticeship programs.
[9] "Navigating Registered Apprenticeship Funding Sources," Department of Industrial Relations, accessed February 6, 2024, dir.ca.gov/das/funding_source.htm.
[10] Molly Smith and Nic Querolo, "We're Hiring, Especially If You're in High School and Want an Apprenticeship," accessed August 3, 2022, bloomberg.com/news/articles/2022-08-03/apprenticeship-programs-grow-during-high-us-employment-rate?embedded-checkout=true.
[11] "Apprenticeship," Department of Industrial Relations (Division of Apprenticeship Standards), accessed February 6, 2024, dir.ca.gov/DAS/apprenticeship.pdf.
[12] "Fact Sheet: Investing $90 Million Through ApprenticeshipUSA to Expand Proven Pathways into the Middle Class," U.S. Department of Labor, accessed February 6, 2024, dol.gov/newsroom/releases/osec/osec20160421.

The following findings and recommendations address these questions:

Findings

- The state and region are at risk of missing registered apprenticeship goals
- Energy, Construction, & Utilities (ECU) programs far outnumber other sectors
- Equity gaps continue to persist, especially by gender
- Lack of regional coordination to maximize funds & diversify programs

Recommendations

- Use the "apprenticeable occupations" list to develop new and expand existing programs
- Develop pre-apprenticeships to increase participation of underrepresented groups and close equity gaps
- Collaborate with state and regional partners to refine program inventory and outcomes data
- Utilize existing intermediary models to establish a regional apprenticeship ecosystem

Findings

1) The state and region are at risk of missing registered apprenticeship goals

Despite the benefits that apprenticeship programs offer, the State of California is not on track to meet its registered apprenticeship goal of 500,000 registered apprentices by 2029.[13] As of October 2023, there were 94,927 apprentices actively registered with the California Division of Apprenticeship Standards (DAS), with 8,902 apprentices in the San Diego-Imperial region (nine percent of the total).[14] Between 2018 and 2022, California had 73,625 apprenticeship program completers, and approximately 6,904 completers in San Diego-Imperial.[15] To attain nine percent of the 500,000 state goal, **the San Diego-Imperial region would need to register 4,866 new apprentices each year to reach 45,000 by the end of 2029** (Exhibit 1). For a list of active registered apprentices in California by industry, see Appendix B.

Exhibit 1. Target vs. Actual Number of Completers & Registered Apprentices, California and San Diego-Imperial

	Target (2029)	Actual (2023)	Gap
# Completers + Registered Apprentices in California	500,000	168,552	331,448
# Completers + Registered Apprentices in San Diego-Imperial	45,000	15,806	29,194

While a significant gap exists between the current number (15,806) and targeted number (45,000) of registered apprentices, the number of apprenticeship programs have increased since the region last conducted an environmental scan on apprenticeships. In October 2016, the San Diego Workforce Partnership found 469 registered apprenticeship programs in California.[16] In October 2023, that number increased by 70 percent to 795 registered apprenticeships. Of the 795 registered apprenticeship programs, 285 have sponsors in the San Diego-Imperial region—an increase of 102 percent. Of these 285 programs, most have offices outside the region, but 69 are located in the San Diego-Imperial region (Exhibit 2). For a list of regional apprenticeships, see Appendix C.

Exhibit 2. 2016 vs. 2023 Report Findings on the Apprenticeship Landscape,[17] California and San Diego-Imperial

	October 2016	October 2023	% Increase
# Registered Apprenticeships in California	469	795	70% ↑
# Registered Apprenticeships with Sponsors in San Diego-Imperial	141	285	102% ↑
# Registered Apprenticeships Located in San Diego-Imperial	39	69	77% ↑

[13] "The Road to 500,000 Apprentices: Ideas for Expanding Apprenticeship in California," New America, accessed February 6, 2024, newamerica.org/education-policy/reports/road-500000-apprentices/introduction.
[14] There were 8,492 registered apprentices in San Diego County and 410 registered apprentices in Imperial County in October 2023. "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.
[15] DAS Completion Dashboard does not provide # of completers by region, so COE estimated the number of San Diego-Imperial completers: As of October 23, 2023, there were 36,098 active registered apprentices in San Diego-Imperial, which is 9% of California's active apprentices (36,098/94,927). Using 9% to extrapolate the number of completers in the region between 2018 and 2022, we get 6,904 estimated completers for San Diego-Imperial. Accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/CompletionDashboard_16301020658110/CompletionDashboard.
[16] "Apprenticeships," San Diego Workforce Partnership, November 2016, workforce.org/sites/default/files/apprenticeships-full_report_2016-11-02.pdf.
[17] Please note that data is updated regularly. "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

2) Energy, Construction, & Utilities programs far outnumber other sectors

Despite the 70 percent increase in registered apprenticeship programs between 2016 and 2023, there was little variation in apprenticeships by sector. The number of apprentices in Energy, Construction, & Utilities (ECU) far outnumbered all other sectors in California and the San Diego-Imperial region. As of October 2023, there were 94,927 active registered apprentices in California, and 67 percent—or 63,601of them—were in the ECU sector. For comparison, there were only 11,394 apprentices (12 percent) in Advanced Manufacturing, which was the second largest sector with active registered apprentices (Exhibit 3).[18] Similarly, ECU had the most registered apprentices in the San Diego-Imperial region, with nearly four times as many apprentices in Public Safety & Government in San Diego County and five times as many apprentices in Advanced Manufacturing in Imperial County (Exhibit 4).

Exhibit 3. Number of Active Registered Apprentices by Sector, California (October 2023)

Sector	Count
Energy, Construction, & Utilities	63,601
Advanced Manufacturing	11,394
Public Safety & Government	7,759
Business & Entrepreneurship	7,553
ICT & Digital Media	1,462
Advanced Transportation & Logistics	1,065
Retail, Hospitality, & Tourism	824
Health	574
Education & Human Development	483
Agriculture, Water, & Environmental Technologies	211
Life Sciences & Biotechnology	1

REGISTERED APPRENTICES

94,927 California

8,492 San Diego County

410 Imperial County

Exhibit 4. Number of Active Registered Apprentices by Sector, San Diego-Imperial (October 2023)

	San Diego County	Imperial County
Energy, Construction, & Utilities	5,159	309
Public Safety & Government	1,304	2
Advanced Manufacturing	1,264	58
Business & Entrepreneurship	444	40
ICT* & Digital Media	155	1
Advanced Transportation & Logistics	97	0
Retail, Hospitality, & Tourism	43	0
Education & Human Development	22	0
Agriculture, Water, & Environmental Technologies	4	0

*ICT = Information and Communication Technologies

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[18] As of October 23, 2023, there were 73 industries in the "Industry Breakdown" list in the DAS Registration Dashboard. The San Diego & Imperial COE converted these 73 industries into one of the 11 California Community Colleges Chancellor's Office (CCCCO) sectors to develop this exhibit, using apprenticeship program information about each of the 73 industries to categorize them as closely as possible into the 11 CCCCO sectors. The San Diego & Imperial COE attempted to find the total number of registered apprentices since 2018 (year of Governor Gavin Newson's announcement); however, the San Diego & Imperial COE found discrepancies in other data sources and decided to use the DAS Registration Dashboard due to its availability.

3) Equity gaps continue to persist, especially by gender

In 2022, the ratio of male-to-female residents in California was approximately 1-to-1; 50 percent of the population in California were female and 50 percent were male. Similarly, 51 percent of the population were male, and 49 percent were female in San Diego-Imperial region.[19] However, the gender representation in apprenticeship programs does not reflect the general population. In October 2023, male registered apprentices outnumbered female apprentices nearly nine to one in California and the San Diego-Imperial region (Exhibit 5). The San Diego Workforce Partnership found similar discrepancies in gender representation in 2016,[20] suggesting that gender equity gaps continued to persist in registered apprenticeships since 2016.

Exhibit 5. Registered Apprentices by Gender, California and San Diego-Imperial (October 2023)
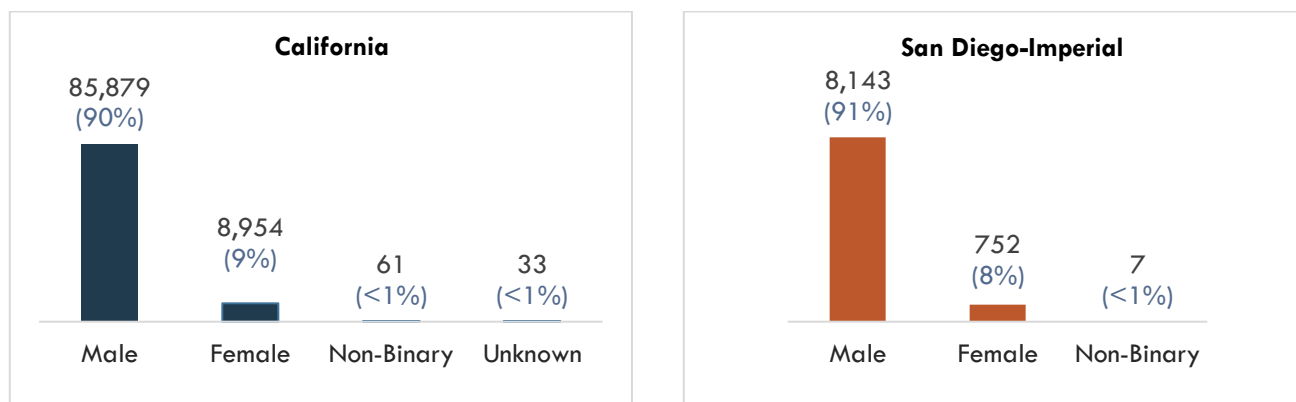
In another study, the San Diego & Imperial COE found that ECU occupations are significantly overrepresented by the Hispanic or Latino/a population.[21] With ECU dominating the apprenticeship landscape, it is unsurprising that the ethnic/racial group with the highest percentage of registered apprentices in Imperial County was Hispanic or Latino/a in October 2023 (Exhibit 1). In terms of racial and ethnic composition, registered apprentices closely reflect the 2022 population in Imperial County.

Exhibit 6. Race/Ethnicity for Registered Apprentices vs. Population, Imperial County

Race/Ethnicity	Registered Apprentices (October 2023)[22]	Population (2022)[23]
Hispanic or Latino/a	90%	86%
White	7%	9%
Black or African American	1%	3%
Other	2%	2%

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[19] Lightcast 2023.03; Population, 2022: California (male=50% vs. female=50%); San Diego County (male=51% vs. female=49%); Imperial County (male=52% vs. female=48%).
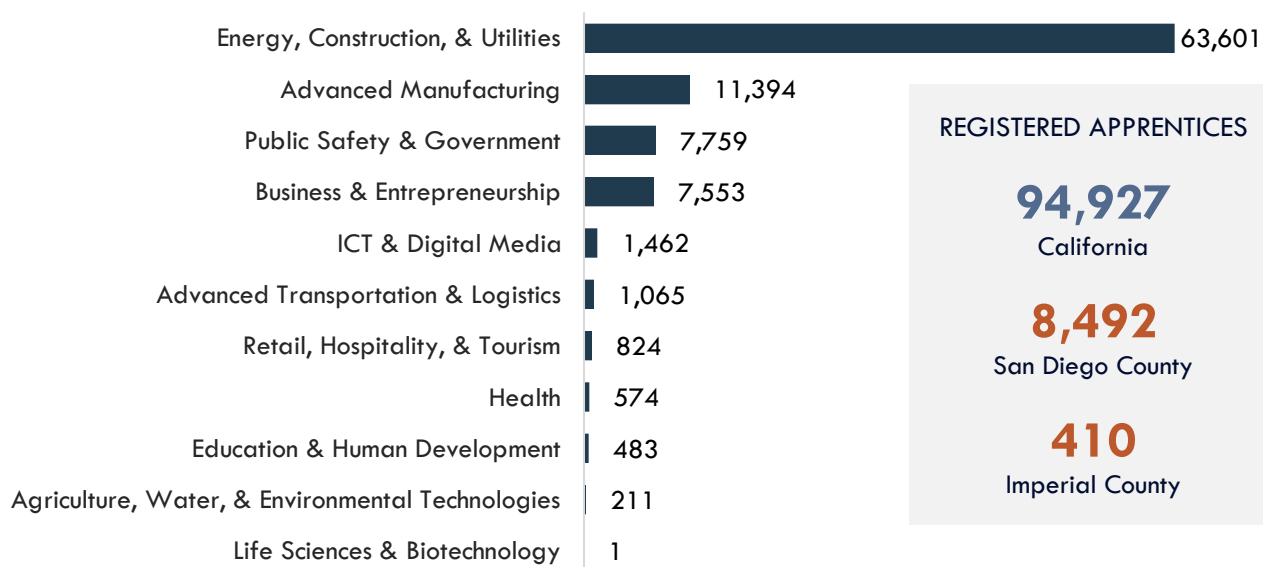[20] "Apprenticeships," San Diego Workforce Partnership, November 2016, workforce.org/sites/default/files/apprenticeships-full_report_2016-11-02.pdf.
[21] "Equity Gaps in Priority Jobs and Programs," San Diego & Imperial COE, February 2023, coeccc.net/san-diego-imperial/2023/02/equity-gaps-in-priority-jobs-and-programs.
[22] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.
[23] "Quickfacts: Imperial County," U.S. Census Bureau, accessed February 7, 2024, census.gov/quickfacts/fact/table/imperialcountycalifornia,sandiegocountycalifornia/PST045222.

In San Diego County, however, there is a much higher percentage of Hispanic or Latino/a registered apprentices than the general population (Exhibit 7). Additionally, the Asian or Pacific Islander group is significantly underrepresented in registered apprentices when compared to San Diego County population.[24,25]

Exhibit 7. Race/Ethnicity for Registered Apprentices vs. Population, San Diego County

■ Registered Apprentices (October 2023) ■ Population (2022)

Race/Ethnicity	Registered Apprentices (October 2023)	Population (2022)
Hispanic or Latino/a	56%	35%
White	32%	43%
Black or African American	6%	6%
Asian or Pacific Islander	3%	13%
Other	2%	5%
Native American or Alaska Native	1%	1%

In terms of age, equity gaps could not be analyzed due to the difference in collecting and reporting data for registered apprentices and the general population. This is a data limitation the region will need to address. However, available data shows that registered apprentices in California and the San Diego-Imperial region are generally under 55 years old, with two-thirds between the ages of 25 and 54 (Exhibit 8).[26] The 55+ age group makes up 31 to 34 percent of the general population, but only two to three percent of registered apprentices in California, San Diego County, and Imperial County.[27,28]

Exhibit 8. Age Distribution for Registered Apprentices (October 2023)[29]

Ages	California	San Diego County	Imperial County
16-24	31%	30%	30%
25-54	67%	68%	67%
55+	2%	2%	3%

[24] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

[25] "Quickfacts: San Diego County," U.S. Census Bureau, accessed February 12, 2024, census.gov/quickfacts/fact/table/sandiegocountycalifornia/PST045222.

[26] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

[27] Lightcast 2023.03; Population, 2022. California (ages 55+=34%); San Diego County (ages 55+=33%); Imperial County (ages 55+=31%).
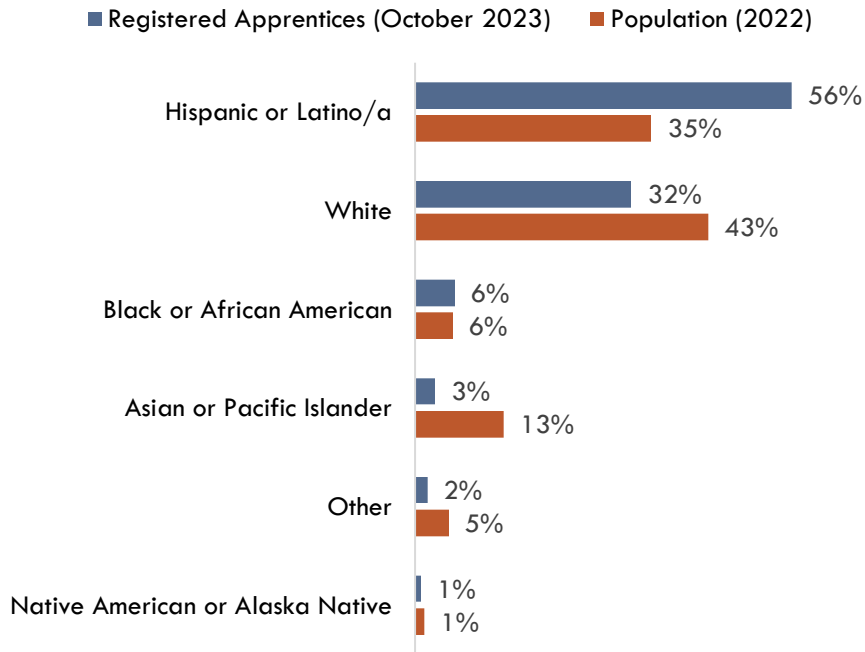
[28] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

[29] Age ranges in the table are limited to the data set provided by the DAS Registration Dashboard, which only includes three ranges: 16-24, 25-52, 55+.

4) Lack of regional coordination to maximize funds & diversify programs

There is a significant amount of funding opportunities[30] available to develop apprenticeship and pre-apprenticeship programs, but there is no structured, coordinated regional effort to effectively use them to expand current offerings. Despite increased funding in recent years for non-traditional apprenticeship programs, existing programs are still primarily in traditional fields (e.g. ECU). For example, the San Diego-Imperial region only has seven of the 88 DAS-recognized pre-apprenticeship programs, yet they only focus on ECU and food services (Exhibit 9). For a full list of DAS pre-apprenticeship programs in the region, see Appendix D.

Exhibit 9. Pre-Apprenticeship Programs in San Diego-Imperial (Division of Apprenticeship Standards)

Pre-Apprenticeship Program Name	Year Approved	DAS Industry or Occupation
Grossmont Adult Reentry Education	2022	Food Services (Baking)
Grossmont Adult Reentry Education	2022	Food Services (Cook)
Grossmont Adult Reentry Education	2022	Food Services (Food Service Manager)
GUHSD Reentry Education Construction Trades	2022	Construction
San Diego College Continuing Education Foundation (SDCCEF) High Road Apprenticeship Ready Program	2022	Construction
San Diego County Superintendent of Schools-JCCS, CTE Culinary Program	2022	Culinary
Grossmont Union High School District/ West Hills High School	2023	Construction

The apprenticeship programs at the San Diego and Imperial Counties Community Colleges also primarily focus on the trades or traditional apprenticeship fields. According to the California Community Colleges Chancellor's Office Curriculum Inventory (COCI), five out of the 10 regional colleges collectively offer 65 apprenticeship programs, which is 19 percent of the statewide total (Exhibit 10).[31] For a list of the San Diego and Imperial Counties Community College apprenticeship programs in COCI, see Appendix E.

Exhibit 10. Number of Apprenticeship Programs in Chancellor's Office Curriculum Inventory (COCI) by College

- Palomar College: 21
- San Diego City College: 19
- Imperial Valley College: 18
- San Diego Miramar College: 5
- Grossmont College: 2

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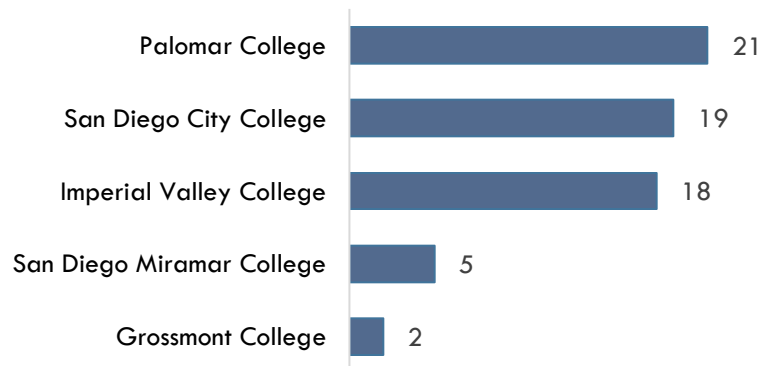
[30] dir.ca.gov/das/funding_source.htm.
[31] As of June 5, 2023, there were 338 program titles with "apprenticeship" in COCI across the state. coci2.ccctechcenter.org/programs.

While San Diego College of Continuing Education, Southwestern College, and MiraCosta College do not have apprenticeship programs listed in COCI, the San Diego & Imperial COE found evidence of apprenticeship programs in other sources. According to the Chancellor's Office Community College Pipeline (LaunchBoard), students from Southwestern College and San Diego College of Continuing Education attained journey-level status (i.e., completed their apprenticeships) in program year 2020-2021 (Exhibit 11).[32] According to DAS, MiraCosta College offers apprenticeship programs through the Technology Career Institute (TCI), yet there is no evidence of these programs in the Chancellor's Office data products (Exhibit 11).[33]

Exhibit 11. Number of Students with Apprenticeship Journey-Level Attainment by College (Chancellor's Office Community College Pipeline, Program Year 2020-2021)

College	Number
Palomar College	204
San Diego Miramar College	137
San Diego City College	55
Southwestern College	19
San Diego College of Continuing Education	18
Imperial Valley College	11
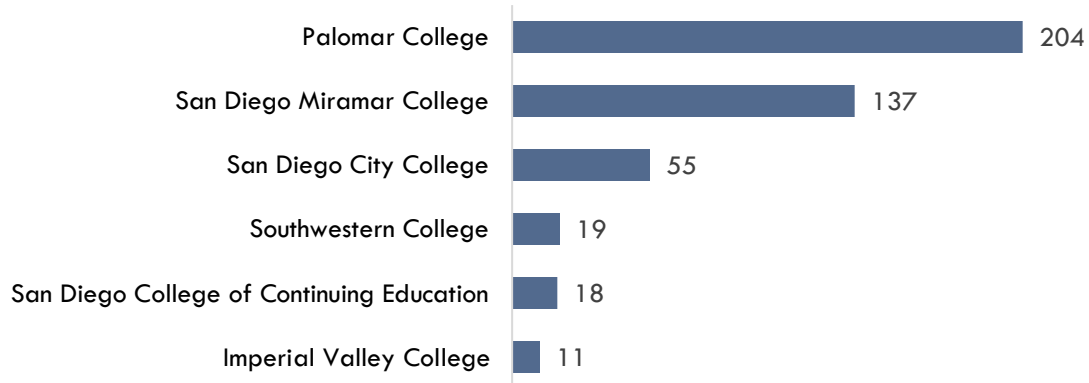
In summary, the following sources have information about apprenticeships offered at the San Diego and Imperial Counties Community Colleges. The inconsistency in where data is captured suggests there is no regional coordination in developing or tracking apprenticeship programs.

Exhibit 12. Sources with Apprenticeship Programs at San Diego and Imperial Counties Community Colleges

Community College	DAS[34]	Chancellor's Office COCI[35]	Chancellor's Office LaunchBoard[36]
Cuyamaca College			
Grossmont College		✓	
Imperial Valley College		✓	✓
MiraCosta College	✓		
Palomar College		✓	✓
San Diego College of Continuing Education			✓
San Diego City College		✓	✓
San Diego Mesa College			
San Diego Miramar College		✓	✓
Southwestern College			✓

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[32] "Community College Pipeline: Overview," California Community Colleges, calpassplus.org/LaunchBoard/Community-College-Pipeline.aspx.
[33] dir.ca.gov/databases/das/pwaddrstart.asp
[34] dir.ca.gov/databases/das/pwaddrstart.asp
[35] "Programs," California Community Colleges Curriculum Inventory (COCI), coci2.ccctechcenter.org/programs.
[36] "Community College Pipeline: Overview," California Community Colleges, calpassplus.org/LaunchBoard/Community-College-Pipeline.aspx.

Recommendations

Drawing on insights from the previous sections, the San Diego & Imperial COE offers four key recommendations for equitable apprenticeship development:

1. Use the "apprenticeable occupations" list to develop new and expand existing programs
2. Develop pre-apprenticeships to increase participation of underrepresented groups and close equity gaps
3. Collaborate with state and regional partners to refine program inventory and outcomes data
4. Utilize existing intermediary models to establish a regional apprenticeship ecosystem

1) Use the "apprenticeable occupations" list to develop new and expand existing programs

Progress toward the 500,000 apprentices by 2029 means developing apprenticeship programs new to the San Diego-Imperial region as well as expanding existing apprenticeship programs. By focusing on occupations that DAS has already approved, colleges can utilize established standards and curricular pathways. Appendix A includes labor market information on 136 high-wage, high-demand, and apprenticeable occupations in San Diego County and 129 in Imperial County. Unlike the existing apprenticeship program landscape, the majority of these occupations are not in the ECU sector; instead, the top five sectors are Advanced Manufacturing, ICT & Digital Media, Business & Entrepreneurship, Health, and Advanced Transportation & Logistics (Exhibit 13). This list provides suggestions for the San Diego and Imperial Counties Community Colleges to diversify the fields that apprenticeships are offered in.

Exhibit 13. Number of DAS High-Wage, High-Demand Apprenticeable Occupations by Sector
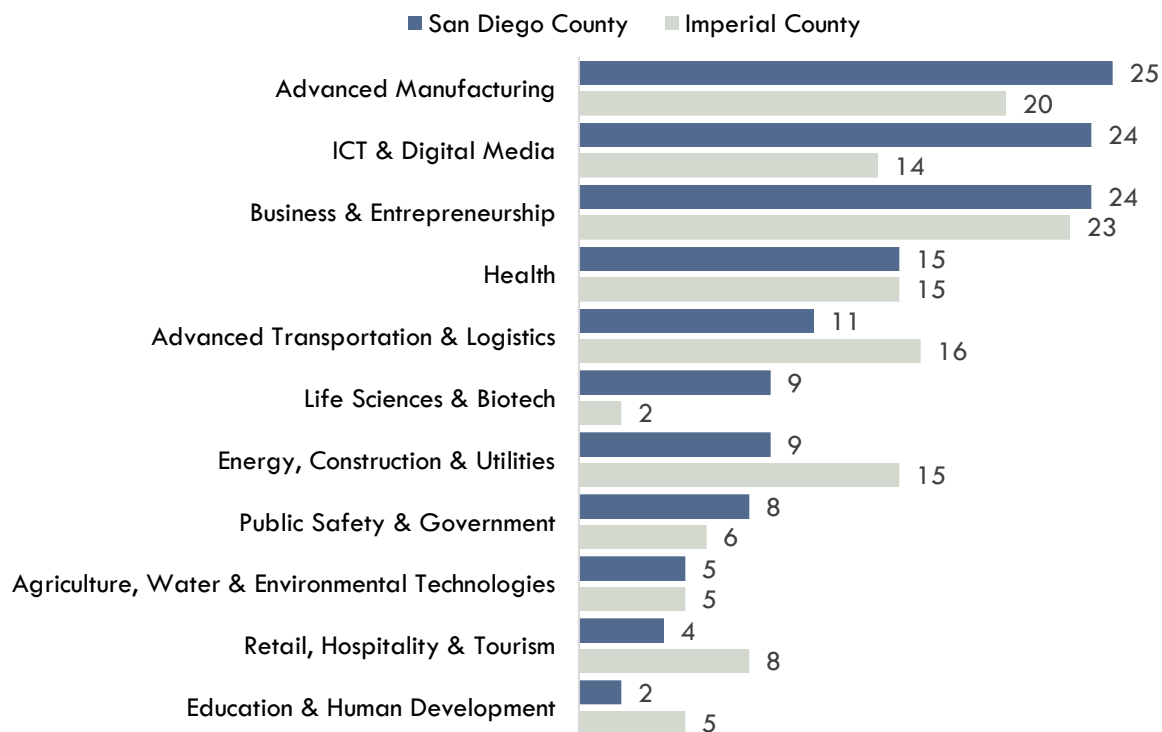
Legend: ■ San Diego County   ■ Imperial County

Sector	San Diego County	Imperial County
Advanced Manufacturing	25	20
ICT & Digital Media	24	14
Business & Entrepreneurship	24	23
Health	15	15
Advanced Transportation & Logistics	11	16
Life Sciences & Biotech	9	2
Energy, Construction & Utilities	9	15
Public Safety & Government	8	6
Agriculture, Water & Environmental Technologies	5	5
Retail, Hospitality & Tourism	4	8
Education & Human Development	2	5

2) Develop pre-apprenticeships to increase participation of underrepresented groups and close equity gaps

Pre-apprenticeships are an effective method for diversifying registered apprenticeships. Appendix D lists registered pre-apprenticeship programs, including program name, year approved, and occupation. Organizations interested in growing apprenticeships should consider applying existing programs' design to the San Diego-Imperial region while focusing on pre-apprenticeships with traditionally underrepresented groups in apprenticeships (e.g., women) to close wage gaps. For example, recruiting more women in ECU would increase economic mobility. In San Diego County, construction is the only industry in which women earned more than men: $50,985 vs. $46,330 (Exhibit 14).[37]

Exhibit 14. Median Earnings by Gender, San Diego County (2021)

Industry	Women	Men
Agriculture, Forestry, Fishing & Hunting, Mining	$24K	$31K
Arts, Entertainment, Recreation, Accommodations, Food Services	$20K	$26K
Construction	$51K	$46K
Educational Services, Health Care, Social Assistance	$44K	$57K
Finance & Insurance, Real Estate, Rental & Leasing	$53K	$73K
Information	$60K	$77K
Manufacturing	$51K	$76K
Other Services Except Public Administration	$21K	$35K
Professional, Scientific, Management, Administrative, Wastewater	$54K	$72K
Public Administration	$59K	$87K
Retail Trade	$26K	$33K
Transportation & Warehousing & Utilities	$43K	$48K
Wholesale Trade	$43K	$55K

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[37] "San Diego County," Data USA, accessed February 6, 2024, datausa.io/profile/geo/san-diego-county-ca.

Similarly, in Imperial County, construction has the smallest wage difference of all industries when comparing genders; women earn nearly as much as men: $38,000 vs. $41,000 (Exhibit 15).[38]

Exhibit 15. Median Earnings by Gender, Imperial County (2021)

■ Women ■ Men

Industry	Women	Men
Agriculture, Forestry, Fishing & Hunting, Mining	$16K	$29K
Arts, Entertainment, Recreation, Accommodations, Food Services	$18K	$23K
Construction	$38K	$41K
Educational Services, Health Care, Social Assistance	$29K	$40K
Finance & Insurance, Real Estate, Rental & Leasing	$30K	$45K
Information	$16K	$53K
Manufacturing	$25K	$39K
Other Services Except Public Administration	$17K	$27K
Professional, Scientific, Management, Administrative, Waste Management	$25K	$29K
Public Administration	$51K	$84K
Retail Trade	$21K	$29K
Transportation & Warehousing & Utilities	$30K	$64K
Wholesale Trade	$20K	$37K

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[38] "Imperial County," Data USA, accessed February 6, 2024, datausa.io/profile/geo/imperial-county-ca.

Although pre-apprenticeships are a viable path to registered apprenticeships, they are currently underutilized. Since 2017, DAS approved only 88 pre-apprenticeship programs in California—among them 24 in ECU and 23 in ICT & Digital Media. For a list of pre-apprenticeship programs in California, see Appendix D.

Exhibit 16. Number of Pre-apprenticeship Programs by Sector, California (October 2023)

Sector	Number
Energy, Construction, & Utilities	24
ICT & Digital Media	24
Advanced Manufacturing	13
Retail, Hospitality, & Tourism	7
Agriculture, Water, & Environmental Technologies	5
Public Safety & Government	5
Advanced Transportation & Logistics	5
Health	4
Education & Human Development	1
Life Sciences & Biotechnology	0
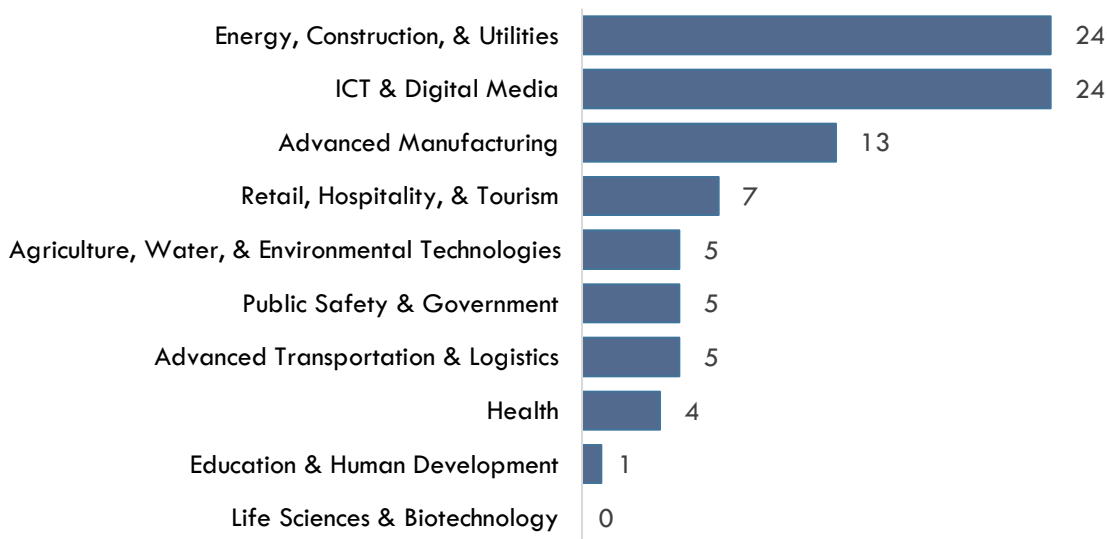
Recent funding opportunities, such as the Equal Representation in Construction Apprenticeship (ERiCA) Grant, provide childcare resources for apprentices, a feature intended to increase female enrollment.[39] Including resources such as childcare would benefit both San Diego and Imperial Counties. Imperial County, in particular, has a significantly higher percentage (61 percent) of apprentices with at least one dependent when compared to California (44 percent) and San Diego County (49 percent).

Exhibit 17. Percentage of Registered Apprentices with Dependents by Region (October 2023)

■ No Dependents   ■ At Least 1 Dependent

Region	No Dependents	At Least 1 Dependent
California	56%	44%
San Diego County	51%	49%
Imperial County	40%	61%
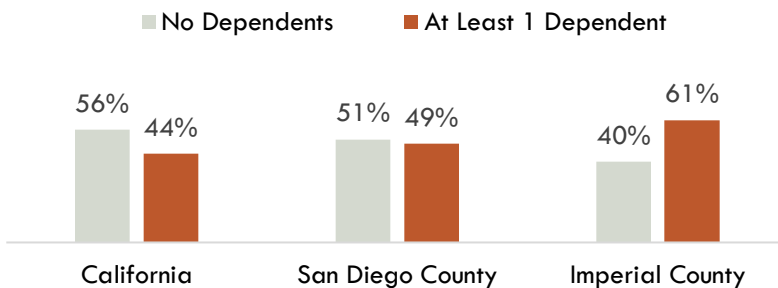
To help maximize funding opportunities, like the ERiCA grant, the region should consider tracking the path of apprentices longitudinally from pre-apprenticeship to registered apprenticeship. Creating a shared database and method for tracking pre-apprentices as they enter registered apprenticeship programs is critical. Building out the data infrastructure to track this progress is a key component of showing the journey from pre-apprenticeship to apprenticeship and capturing impact.

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[39] "Equal Representation in Construction Apprenticeship (ERiCA) Grant," Department of Industrial Relations, accessed February 6, 2024, dir.ca.gov/DAS/Grants/ERICA.html.

3) Collaborate with state and regional partners to refine program inventory and outcomes data

This study is the first step in developing an inventory of apprenticeship and pre-apprenticeship programs in the San Diego-Imperial region. The San Diego & Imperial COE compiled this report using data from the DAS and California Community Colleges Chancellor's Office (CCCCO); however, the information does not align, and programs found in one source are not in others. As new funding becomes available, such as the California Apprenticeship Initiative (CAI), community colleges can use the grant reporting requirements as an opportunity to collect accurate data on apprentices.

In the meantime, data gaps persist. The San Diego & Imperial COE could not find a list of LEAs in the region, only a list of employer sponsors from the DAS website. To find apprenticeships offered at the colleges, the San Diego & Imperial COE explored the Chancellor's Office Curriculum Inventory (COCI) database; however, the apprenticeship programs listed may not capture all apprenticeship programs at the colleges. Therefore, a centralized, state-wide, registered apprenticeship database with employer or program sponsor, LEA, headcounts, and demographics for active and completed apprentices is needed.

To achieve this goal, apprenticeship stakeholders must reconcile missing information. Below are examples of discrepancies in the data across different sources:

- According to COCI, Palomar College has a pre-apprenticeship program in the Taxonomy of Programs (TOP) code 0956.70 Industrial and Occupational Safety and Health, but this program is not captured in DAS data.
- According to DAS, Imperial County has only one active apprentice in the Information and Communication Technologies (ICT) & Digital Media sector, yet Imperial Valley College has four active apprenticeship programs in COCI.[40, 41]

Collaborating with other regions across California to build an accurate database is a key next step. Collaborating with the Chancellor's Office and DAS in building this database will inform the accuracy of the data and help create a network among the Chancellor's Office and DAS to help inform the continuous improvement of apprenticeship data products.

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[40] "Programs," California Community Colleges Curriculum Inventory (COCI), coci2.ccctechcenter.org/programs.
[41] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.

4) Utilize existing intermediary models to establish a regional apprenticeship ecosystem

Development of new pre-apprenticeship and apprenticeship programs can be a daunting process for both employers and community colleges. A regional intermediary, similar to Inland Empire's LAUNCH Apprenticeship Network, could provide additional support to colleges interested in growing apprenticeships.[42] The regional intermediary helps simplify the state registration process, offering ongoing support to new and existing apprenticeship programs, and facilitating partnerships with employers, community colleges, high schools, and apprentices.

The regional intermediary would help establish an apprenticeship ecosystem by:

- Creating partnerships between employers and community colleges to align industry needs with curriculum
- Supporting apprentices, employers, and LEAs through streamlined communication and progress monitoring
- Providing technical assistance throughout the registration process[43]

The intermediary acts as a link through which the key partners of the apprenticeship can efficiently communicate. By connecting these groups—community colleges, employers, high schools, and apprentices—an intermediary agency streamlines communication to flow through one source.

While intermediary support is valuable, community colleges interested in serving as the LEA need to create an apprenticeship workgroup at their institution to ensure a quality learning experience for apprentices. Collaboration across departments is crucial to the long-term sustainability of apprenticeship programs. The team should include the following representatives:

1. Career Technical Education/Career Education (CTE/CE) faculty
2. CTE/CE dean or associate dean
3. Apprenticeship program lead
4. Admissions and records staff
5. Employer engagement, job placement, or work-based learning liaison
6. Academic and/or counselor
7. Marketing and outreach liaison

Establishing an apprenticeship workgroup with representation across instruction and student services will streamline the recruiting, enrollment, onboarding, and records of apprentices, ensuring a supportive student environment.

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[42] launchapprenticeship.org.

[43] "What is Launch?," LAUNCH Apprenticeship Network," accessed February 6, 2024, launchapprenticeship.org/about-launch/#what-is-launch.

Conclusion and Next Steps

The San Diego & Imperial COE encourages the San Diego and Imperial Counties Community Colleges to use this study as a resource in developing a regional strategic plan for apprenticeships. To have an evidence-based approach to growing apprenticeships in the region, we need comprehensive and accurate data. The current gaps in our data do not allow for a holistic understanding of the apprenticeship landscape regionally, which makes it difficult to strategize about how to grow apprenticeships. The next step is to close these information gaps.

In collaboration with the San Diego & Imperial Regional Consortium, the San Diego & Imperial COE will engage apprenticeship stakeholders at the local, regional, and state level. The San Diego & Imperial COE is currently making progress toward a statewide data tool that would allow the San Diego-Imperial region to see all active registered apprenticeship programs, the LEAs that train for these programs, and the program sponsors.

The Regional Apprenticeship Planning Team (RAPT)—comprised of community college and workforce development partners—along with employer partners will help validate and update this data source. Additionally, the San Diego & Imperial Regional Consortium will engage the community colleges to gain a better understanding of each college's prior apprenticeship program offerings, current program needs, and areas of opportunity. This approach will allow for a unified message to local employers from the community colleges, led by the colleges and informed by the Regional Consortium.

In collaboration with the San Diego & Imperial Regional Consortium, the San Diego & Imperial COE will host meaningful discussions with regional partners about this study's findings and recommendations.

Appendix A: High-Wage, High-Demand Apprenticeable Occupations

San Diego County

Exhibit 18. Labor Market Information[44] for High-Wage, High-Demand Apprenticeable Occupations by Sector

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[45]
Advanced Manufacturing					
49-9071	Maintenance and Repair Workers, General	1,802	$18.08	$22.60	
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	658	$17.73	$19.20	
51-1011	First-Line Supervisors of Production and Operating Workers	530	$24.80	$32.39	●
51-4121	Welders, Cutters, Solderers, and Brazers	430	$22.05	$27.77	●
17-3023	Electrical and Electronic Engineering Technologists and Technicians	386	$29.10	$31.35	●
51-4041	Machinists	370	$20.15	$26.64	
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	243	$29.00	$37.62	
49-9041	Industrial Machinery Mechanics	227	$23.91	$29.32	●
47-2211	Sheet Metal Workers	206	$23.87	$33.31	
11-3051	Industrial Production Managers	204	$44.65	$60.26	
51-9161	Computer Numerically Controlled Tool Operators	156	$17.53	$22.79	
47-2221	Structural Iron and Steel Workers	148	$23.07	$34.11	
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	148	$18.16	$23.90	
17-2011	Aerospace Engineers	141	$42.95	$55.91	
49-2011	Computer, Automated Teller, and Office Machine Repairers	117	$17.81	$21.91	
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	88	$27.34	$34.99	
51-2041	Structural Metal Fabricators and Fitters	88	$22.63	$29.67	
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	83	$18.53	$23.49	
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	80	$18.12	$22.03	
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	76	$23.93	$28.17	●
17-3026	Industrial Engineering Technologists and Technicians	66	$24.12	$29.20	●
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	60	$17.84	$20.89	
17-3027	Mechanical Engineering Technologists and Technicians	54	$22.76	$29.84	
49-9031	Home Appliance Repairers	47	$17.91	$22.47	
49-9094	Locksmiths and Safe Repairers	31	$20.99	$22.85	
Advanced Transportation & Logistics					
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,587	$19.94	$24.33	

[44] Lightcast 2023.03; QCEW, Non-QCEW, Self-Employed.
[45] SOC codes with an overrepresentation of workers ages 55+ (the threshold being 17 percent) were considered to have a retiring population.

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[45]
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	684	$21.31	$25.49	●
43-5061	Production, Planning, and Expediting Clerks	672	$22.36	$28.75	●
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	521	$29.89	$36.98	●
53-3052	Bus Drivers, Transit and Intercity	296	$19.86	$22.80	
11-3071	Transportation, Storage, and Distribution Managers	234	$34.38	$47.26	
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	215	$23.78	$29.86	●
49-3021	Automotive Body and Related Repairers	142	$20.48	$28.90	
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	124	$25.51	$30.89	●
43-5011	Cargo and Freight Agents	107	$17.80	$22.55	
49-2091	Avionics Technicians	105	$38.15	$38.42	
Agriculture, Water, and Environmental Technologies					
37-2021	Pest Control Workers	230	$18.28	$21.01	●
37-3013	Tree Trimmers and Pruners	136	$21.99	$25.22	
51-8021	Stationary Engineers and Boiler Operators	116	$18.87	$25.64	
51-8031	Water and Wastewater Treatment Plant and System Operators	96	$25.90	$32.28	●
19-4013	Food Science Technicians	24	$19.30	$23.49	
Business & Entrepreneurship					
11-1021	General and Operations Managers	2,730	$38.77	$53.52	
13-1199	Business Operations Specialists, All Other	2,278	$22.83	$33.50	
43-3031	Bookkeeping, Accounting, and Auditing Clerks	2,093	$20.37	$23.90	●
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,670	$25.14	$30.29	●
11-9199	Managers, All Other	1,526	$32.70	$58.63	
13-2011	Accountants and Auditors	1,460	$30.68	$39.22	
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,298	$22.96	$31.54	
13-1111	Management Analysts	1,236	$34.24	$45.69	
13-1071	Human Resources Specialists	1,172	$28.73	$36.49	
13-1161	Market Research Analysts and Marketing Specialists	1,111	$26.40	$34.95	
13-1082	Project Management Specialists	1,034	$37.00	$49.31	
11-2022	Sales Managers	817	$35.69	$59.85	
43-6011	Executive Secretaries and Executive Administrative Assistants	636	$30.31	$37.47	●
13-1041	Compliance Officers	554	$29.91	$41.73	
13-1028	Buyers and Purchasing Agents	548	$28.59	$36.66	
11-2021	Marketing Managers	459	$51.88	$75.95	
13-1151	Training and Development Specialists	448	$24.57	$34.81	
43-9199	Office and Administrative Support Workers, All Other	428	$17.52	$23.40	
11-3012	Administrative Services Managers	314	$33.24	$45.06	
43-9041	Insurance Claims and Policy Processing Clerks	303	$18.48	$20.88	
13-1051	Cost Estimators	302	$29.15	$38.50	
13-2051	Financial and Investment Analysts	255	$37.08	$46.96	
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	210	$20.20	$23.38	
15-2041	Statisticians	60	$41.71	$59.57	
Education & Human Development					

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[45]
21-1021	Child, Family, and School Social Workers	410	$22.64	$29.99	
21-1012	Educational, Guidance, and Career Counselors and Advisors	356	$27.10	$31.33	
Energy, Construction & Utilities					
47-2031	Carpenters	1,393	$21.01	$28.39	
47-2111	Electricians	1,241	$22.76	$29.51	
47-2152	Plumbers, Pipefitters, and Steamfitters	609	$23.08	$29.81	
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	545	$21.58	$29.37	
47-2073	Operating Engineers and Other Construction Equipment Operators	362	$29.81	$37.77	•
47-4011	Construction and Building Inspectors	191	$27.43	$37.23	
47-2121	Glaziers	94	$22.21	$29.76	
49-2098	Security and Fire Alarm Systems Installers	93	$22.11	$29.02	
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	54	$29.95	$39.68	
Health					
29-1141	Registered Nurses	2,238	$47.04	$56.75	
31-1131	Nursing Assistants	1,821	$18.15	$18.77	
31-9092	Medical Assistants	1,693	$17.91	$21.08	
31-9091	Dental Assistants	934	$18.67	$22.64	
21-1093	Social and Human Service Assistants	933	$18.88	$22.00	•
29-2061	Licensed Practical and Licensed Vocational Nurses	701	$28.91	$31.00	•
29-2052	Pharmacy Technicians	338	$18.55	$23.06	
29-2018	Clinical Laboratory Technologists and Technicians	313	$21.67	$27.88	
29-2099	Health Technologists and Technicians, All Other	172	$19.34	$24.35	
29-2034	Radiologic Technologists and Technicians	114	$37.75	$46.91	
31-9093	Medical Equipment Preparers	87	$23.12	$29.69	
21-1094	Community Health Workers	86	$18.87	$21.42	
29-2055	Surgical Technologists	79	$28.85	$36.56	
29-2043	Paramedics	69	$24.22	$30.62	
29-2081	Opticians, Dispensing	63	$20.75	$24.85	
ICT & Digital Media					
15-1252	Software Developers	1,878	$52.10	$66.08	
15-1299	Computer Occupations, All Other	769	$34.72	$50.40	
11-3021	Computer and Information Systems Managers	740	$65.28	$82.06	
15-1232	Computer User Support Specialists	589	$23.39	$30.35	
27-1024	Graphic Designers	351	$20.20	$29.20	
15-1244	Network and Computer Systems Administrators	310	$38.74	$49.46	
15-1251	Computer Programmers	278	$50.44	$63.33	
27-3031	Public Relations Specialists	270	$24.44	$33.16	
15-1253	Software Quality Assurance Analysts and Testers	254	$40.29	$50.70	
15-2051	Data Scientists	242	$43.62	$59.13	
15-1212	Information Security Analysts	176	$41.27	$54.88	
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	171	$27.06	$31.67	

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[45]
15-1255	Web and Digital Interface Designers	160	$25.86	$41.62	
15-1231	Computer Network Support Specialists	146	$26.51	$34.27	
27-2012	Producers and Directors	145	$25.77	$40.50	
27-3041	Editors	110	$23.99	$32.10	
49-9052	Telecommunications Line Installers and Repairers	90	$28.93	$40.14	
27-1014	Special Effects Artists and Animators	87	$21.02	$40.92	
27-3042	Technical Writers	82	$35.99	$40.87	
17-3031	Surveying and Mapping Technicians	78	$25.77	$31.02	
27-4011	Audio and Video Technicians	76	$20.35	$26.22	
49-9051	Electrical Power-Line Installers and Repairers	76	$33.39	$47.70	
15-1242	Database Administrators	60	$37.07	$54.23	
27-4032	Film and Video Editors	52	$21.18	$33.25	
Life Sciences & Biotech					
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	751	$18.13	$23.64	
19-4021	Biological Technicians	450	$22.04	$27.13	
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	357	$38.43	$52.37	
11-9121	Natural Sciences Managers	314	$74.52	$87.20	
19-4061	Social Science Research Assistants	238	$23.04	$30.70	
19-4031	Chemical Technicians	143	$20.48	$24.54	
49-9062	Medical Equipment Repairers	56	$20.56	$26.47	
19-3091	Anthropologists and Archeologists	22	$27.53	$31.84	
51-9083	Ophthalmic Laboratory Technicians	22	$17.51	$20.95	
Public Safety & Government					
33-3051	Police and Sheriff's Patrol Officers	709	$35.68	$48.34	
33-2011	Firefighters	337	$24.08	$30.79	
33-3012	Correctional Officers and Jailers	230	$29.06	$36.55	
43-5032	Dispatchers, Except Police, Fire, and Ambulance	206	$17.93	$21.54	
21-1092	Probation Officers and Correctional Treatment Specialists	98	$29.05	$38.61	
43-5031	Public Safety Telecommunicators	83	$25.13	$30.59	
33-1021	First-Line Supervisors of Firefighting and Prevention Workers	32	$39.16	$46.34	
33-2021	Fire Inspectors and Investigators	11	$21.13	$23.80	
Retail, Hospitality, and Tourism					
11-9051	Food Service Managers	762	$21.13	$28.34	
35-1011	Chefs and Head Cooks	406	$22.11	$27.61	
11-9081	Lodging Managers	94	$24.52	$33.08	
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	51	$18.14	$22.14	

Imperial County

Exhibit 19. Labor Market Information[46] for High-Wage, High-Demand Apprenticeable Occupations by Sector

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[47]
Advanced Manufacturing					
51-9199	Production Workers, All Other	72	$17.21	$18.07	
49-9071	Maintenance and Repair Workers, General	65	$17.36	$21.41	
51-9111	Packaging and Filling Machine Operators and Tenders	33	$15.45	$16.33	
51-1011	First-Line Supervisors of Production and Operating Workers	26	$19.06	$31.18	
51-4121	Welders, Cutters, Solderers, and Brazers	19	$18.03	$23.21	
49-9041	Industrial Machinery Mechanics	17	$23.87	$28.73	●
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	7	$48.35	$53.48	
11-3051	Industrial Production Managers	5	$47.00	$60.19	
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	5	$39.03	$39.14	
49-2011	Computer, Automated Teller, and Office Machine Repairers	5	$25.65	$31.44	
51-4041	Machinists	5	$16.91	$21.46	
17-3023	Electrical and Electronic Engineering Technologists and Technicians	4	$27.18	$35.03	
47-2211	Sheet Metal Workers	4	$23.00	$29.18	
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	4	$15.84	$18.85	
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	4	$16.79	$20.87	
51-5113	Print Binding and Finishing Workers	3	$15.29	$17.29	
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	3	$17.48	$21.59	
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	3	$15.37	$18.17	
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	3	$15.07	$18.85	
53-7063	Machine Feeders and Offbearers	3	$16.48	$18.48	
Advanced Transportation & Logistics					
53-7065	Stockers and Order Fillers	254	$15.58	$16.83	
53-3032	Heavy and Tractor-Trailer Truck Drivers	173	$17.42	$22.37	●
49-3023	Automotive Service Technicians and Mechanics	54	$15.92	$24.87	
53-7051	Industrial Truck and Tractor Operators	38	$15.90	$17.67	
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	34	$19.82	$24.30	●
43-5071	Shipping, Receiving, and Inventory Clerks	27	$15.65	$17.47	
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	23	$28.90	$39.11	
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	14	$23.88	$30.87	●
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	13	$16.38	$20.81	

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[46] Lightcast 2023.03; QCEW, Non-QCEW, Self-Employed.
[47] SOC codes with an overrepresentation of workers ages 55+ (the threshold being 17 percent) were considered to have a retiring population.

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[47]
43-5061	Production, Planning, and Expediting Clerks	12	$19.95	$25.59	●
49-3041	Farm Equipment Mechanics and Service Technicians	9	$19.49	$27.95	
11-3071	Transportation, Storage, and Distribution Managers	8	$27.94	$37.30	
43-5011	Cargo and Freight Agents	6	$17.24	$18.65	
53-3052	Bus Drivers, Transit and Intercity	6	$26.56	$32.05	
49-3021	Automotive Body and Related Repairers	4	$15.48	$23.13	
53-7011	Conveyor Operators and Tenders	3	$16.12	$17.28	
Agriculture, Water, and Environmental Technologies					
51-8031	Water and Wastewater Treatment Plant and System Operators	13	$29.04	$38.99	●
19-4071	Forest and Conservation Technicians	10	$22.18	$25.35	
37-3013	Tree Trimmers and Pruners	8	$20.52	$26.60	
37-2021	Pest Control Workers	7	$17.57	$18.01	
51-8021	Stationary Engineers and Boiler Operators	5	$21.56	$38.70	
Business & Entrepreneurship					
43-9061	Office Clerks, General	153	$15.31	$17.50	
11-1021	General and Operations Managers	90	$32.75	$46.66	
43-3031	Bookkeeping, Accounting, and Auditing Clerks	81	$17.33	$20.94	
13-1041	Compliance Officers	68	$30.24	$43.86	
11-9199	Managers, All Other	60	$37.94	$59.19	
43-1011	First-Line Supervisors of Office and Administrative Support Workers	60	$22.49	$28.75	●
13-1199	Business Operations Specialists, All Other	47	$24.60	$33.05	
13-2011	Accountants and Auditors	39	$26.44	$33.94	
11-2021	Marketing Managers	37	$52.27	$68.91	
13-1111	Management Analysts	30	$29.11	$36.90	
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	27	$20.94	$26.44	
13-1071	Human Resources Specialists	24	$23.79	$30.59	
11-2022	Sales Managers	20	$27.14	$43.87	
13-1082	Project Management Specialists	17	$32.01	$44.91	
13-1161	Market Research Analysts and Marketing Specialists	16	$20.53	$29.09	
13-1028	Buyers and Purchasing Agents	14	$22.32	$30.50	
13-1151	Training and Development Specialists	13	$19.53	$28.13	
43-6011	Executive Secretaries and Executive Administrative Assistants	12	$27.86	$32.31	
43-9199	Office and Administrative Support Workers, All Other	12	$17.47	$24.45	
11-3012	Administrative Services Managers	8	$32.08	$44.01	
13-1051	Cost Estimators	7	$29.01	$36.38	
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	5	$17.76	$21.54	
13-2051	Financial and Investment Analysts	3	$35.03	$44.49	
Education & Human Development					
25-9045	Teaching Assistants, Except Postsecondary	128	$16.93	$17.86	
21-1012	Educational, Guidance, and Career Counselors and Advisors	24	$17.62	$36.39	
21-1021	Child, Family, and School Social Workers	22	$22.00	$24.09	

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[47]
25-2011	Preschool Teachers, Except Special Education	22	$15.83	$18.05	
25-3021	Self-Enrichment Teachers	12	$17.22	$26.01	
Energy, Construction & Utilities					
47-2061	Construction Laborers	51	$16.93	$20.45	
47-2031	Carpenters	37	$17.23	$25.48	
47-2111	Electricians	29	$21.17	$28.70	
47-2073	Operating Engineers and Other Construction Equipment Operators	22	$21.66	$28.59	●
51-8013	Power Plant Operators	22	$35.54	$36.24	
47-2152	Plumbers, Pipefitters, and Steamfitters	21	$21.59	$27.76	
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	20	$21.37	$28.50	
47-2081	Drywall and Ceiling Tile Installers	11	$19.76	$22.25	
47-2051	Cement Masons and Concrete Finishers	5	$21.72	$25.21	
47-2072	Pile Driver Operators	5	$38.15	$44.15	
47-2171	Reinforcing Iron and Rebar Workers	5	$25.21	$29.20	
47-4051	Highway Maintenance Workers	5	$18.21	$19.81	●
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	4	$15.49	$20.07	
47-2121	Glaziers	3	$19.32	$25.24	
47-4011	Construction and Building Inspectors	3	$24.35	$36.90	
Health					
31-9092	Medical Assistants	80	$15.94	$16.77	
29-1141	Registered Nurses	67	$39.91	$47.25	
21-1093	Social and Human Service Assistants	49	$17.33	$19.96	
31-1131	Nursing Assistants	49	$16.32	$17.58	
29-2061	Licensed Practical and Licensed Vocational Nurses	31	$28.63	$29.55	●
27-3041	Editors	19	$38.52	$46.35	
29-2052	Pharmacy Technicians	17	$17.82	$21.74	
31-9091	Dental Assistants	17	$20.70	$24.46	
15-1232	Computer User Support Specialists	12	$22.09	$29.30	
15-1299	Computer Occupations, All Other	10	$23.64	$33.89	
49-9051	Electrical Power-Line Installers and Repairers	10	$32.73	$47.63	
31-9011	Massage Therapists	9	$20.60	$29.56	
15-1252	Software Developers	9	$42.21	$51.16	
21-1094	Community Health Workers	8	$17.20	$24.65	
29-2042	Emergency Medical Technicians	8	$17.35	$18.20	
29-2099	Health Technologists and Technicians, All Other	8	$18.02	$19.47	
15-1253	Software Quality Assurance Analysts and Testers	8	$37.20	$43.63	
11-3021	Computer and Information Systems Managers	6	$49.15	$67.12	
27-1024	Graphic Designers	6	$17.58	$24.76	
27-3031	Public Relations Specialists	6	$27.65	$35.67	
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	6	$28.69	$37.63	
49-9052	Telecommunications Line Installers and Repairers	6	$38.62	$39.59	
29-2034	Radiologic Technologists and Technicians	5	$38.34	$41.83	
15-1244	Network and Computer Systems Administrators	5	$30.10	$40.60	

SOC Code	Occupational Title	# Annual Job Openings	Entry-Level Earnings	Median Earnings	Retiring Workforce (55+)[47]
29-2018	Clinical Laboratory Technologists and Technicians	4	$20.71	$23.69	
29-2055	Surgical Technologists	4	$23.54	$24.46	
31-9093	Medical Equipment Preparers	4	$25.06	$28.96	
15-1231	Computer Network Support Specialists	3	$25.11	$32.47	
15-2051	Data Scientists	3	$30.25	$37.89	
Life Sciences & Biotech					
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	19	$15.68	$17.08	
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	18	$25.46	$44.65	
Public Safety & Government					
33-3012	Correctional Officers and Jailers	121	$41.57	$47.40	
33-3051	Police and Sheriff's Patrol Officers	29	$27.70	$36.63	
33-2011	Firefighters	20	$17.18	$18.88	
21-1092	Probation Officers and Correctional Treatment Specialists	14	$29.85	$35.59	
43-5032	Dispatchers, Except Police, Fire, and Ambulance	14	$17.30	$23.42	
43-5031	Public Safety Telecommunicators	5	$21.47	$23.85	
Retail, Hospitality, and Tourism					
35-2014	Cooks, Restaurant	81	$16.43	$17.43	
53-7064	Packers and Packagers, Hand	64	$15.38	$16.23	
11-9051	Food Service Managers	23	$17.59	$25.26	
35-2012	Cooks, Institution and Cafeteria	19	$17.02	$19.15	
39-5091	Makeup Artists, Theatrical and Performance	14	$28.71	$43.85	
51-3021	Butchers and Meat Cutters	14	$16.95	$18.34	
35-1011	Chefs and Head Cooks	8	$18.01	$24.41	
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	6	$18.23	$24.86	

Appendix B: Registered Apprentices by Industry

Exhibit 20. Number of Active Registered Apprentices[48] by CCCCO Sector and DAS Industry[49]

CCCCO Sector	DAS Industry	# Active CA Apprentices
Advanced Manufacturing		
	IRON - STEEL WORKERS	3,182
	SHEET METAL	2,095
	ENGINEER	1,642
	MISCELLANEOUS MANUFACTURING INDUSTRIES	1,131
	MILWRIGHT	744
	GLAZIER - GLASS WORKERS	728
	FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND TRANSPO…	418
	MISCELLANEOUS SERVICES	402
	STATIONARY ENGINEER AND BUILDING SUPPORT	338
	SHEET METAL HVAC	214
	TESTER MANUFACTURING/AEROSPACE	160
	MACHINERY, EXCEPT ELECTRICAL	94
	ELECTRICAL AND ELECTRONIC MACHINERY, EQUIPMENT AND SUPP..	93
	FOOD AND KINDRED PRODUCTS	65
	MISCELLANEOUS REPAIR SERVICES	51
	PRIMARY METAL INDUSTRIES	22
	RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS	9
	PRINTING, PUBLISHING AND ALLIED INDUSTRIES	6
Advanced Transportation & Logistics		
	LOCAL AND SUBURBAN TRANSIT AND INTERURBAN HIGHWAY PASSENGER…	548
	AUTOMOTIVE REPAIR, SERVICES AND GARAGES	421
	MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING	49
	TRANSPORTATION EQUIPMENT	47
Agriculture, Water & Environmental Technologies		
	LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE	74
	AGRICULTURAL PRODUCTION - CROPS	51
	ADMINISTRATION OF ENIVRONMENTAL QUALITY AND HO…	42
	WATER TRANSPORTATION	19
	FORESTRY	16
	AGRICULTURAL PRODUCTION - LIVESTOCK	7
	MINING AND QUARRYING OF NONMETALLIC MINERALS, EXCEPT F…	1
	PETROLEUM REFINING AND RELATED INDUSTRIES	1

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[48] "Registration Dashboard," California Division of Apprenticeships Standards (DAS), accessed October 23, 2023, public.tableau.com/app/profile/california.apprenticeship/viz/RegistrationDashboard_16301055851260/RegistrationDashboard.
[49] Industry titles were taken directly from DAS and aligned with the closest matching CCCCO industry sector.

CCCCO Sector	DAS Industry	# Active CA Apprentices
Business & Entrepreneurship		
	PERSONAL SERVICES	7,243
	EXECUTIVE, LEGISLATIVE, AND GENERAL GOVERNMENT, EXCEPT FI..	172
	BUSINESS SERVICES	138
Education & Human Development		
	CHILDCARE AND EDUCATIONAL SERVICES	483
Energy, Construction & Utilities		
	CARPENTRY	11,753
	CALIFORNIA FIREFIGHTER	10,974
	ELECTRICAL - ELECTRONIC	7,719
	LABORERS	7,517
	DRYWALL / LATHER	5,070
	PLUMBING	4,631
	ROOFERS	3,229
	PAINTING - DECORATION	1,582
	CEMENT MASONS	1,524
	ELECTRIC, GAS AND SANITARY SERVICES	1,380
	PLUMBING HVAC	1,297
	FIRE SPRINKLER FITTER	942
	ELEVATOR	905
	LINEMAN	674
	CARPET, LINOLEUM - SOFT TILE	641
	CONSTRUCTION PREAPPRENTICE	495
	DRYWALL FINISHING (TAPING)	489
	ASBESTOS WORKERS	456
	PILE DRIVER	430
	TILE LAYER/SETTER	379
	SURVEYOR	364
	BOILERMAKER	288
	BRICKLAYER	235
	INSPECTOR/TESTER	216
	PLASTERERS	215
	TEAMSTER	164
	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS	32
Health		
	HEALTH SERVICES	574
ICT & Digital Media		
	SOUND / COMMUNICATION	1,131
	INFORMATION TECHNOLOGY	297
	MOTION PICTURES	34
Life Sciences & Biotechnology		
	CHEMICALS AND ALLIED PRODUCTS	1
Public Safety & Government		

CCCCO Sector	DAS Industry	# Active CA Apprentices
	JUSTICE, PUBLIC ORDER AND SAFETY	4,154
	INMATE PROGRAMS	3,592
	NATIONAL SECURITY AND INTERNATIONAL AFFAIRS	13
Retail, Hospitality & Tourism		
	FOOD STORES	358
	EATING AND DRINKING PLACES	344
	HOTELS, ROOMING HOUSES, CAMPS AND OTHER LODGING PLACES	97
	MISCELLANEOUS RETAIL	25

Appendix C: San Diego-Imperial Registered Apprenticeships

San Diego County

Exhibit 21. Registered Apprenticeships in San Diego County by Program Sponsors[50]

SOC Code	DAS Occupation	Program Sponsor
51-1011.00	ADVANCE MANUFACTURING LEADERSHIP	T C I APPRENTICESHIP
51-2023.00	Assembler, Electronic I	Build the Future - CAES Assembler Apprenticeship
51-2023.00	Assembler, MIC I	Build the Future - CAES Assembler Apprenticeship
39-5011.00	BARBER	FourM Education Cosmetology and Barbering Apprenticeship Program
39-5011.00	Barber	TNN Beauty, Barber, Cosmetology, Permanent Makeup Apprenticeship of California and Training Center
49-3021.00	BODY SHOP MECHANIC	M T S TRANSIT SERVICES JOINT APPRENTICESHIP COMMITTEE
51-4041.00	C N C OPERATOR-MILLING AND TURNING	T C I APPRENTICESHIP
47-2031.01	CARPENTER	SAN DIEGO ASSOCIATED GENERAL CONTRACTORS J.A.C.
47-2042.00	Carpet, Linoleum & Resilient Floor Layer	SAN DIEGO CARPET, LINOLEUM & FLOOR COVERING INDUSTRIES J.A.C.
47-2051.00	CEMENT MASON	SAN DIEGO ASSOCIATED GENERAL CONTRACTORS J.A.C.
51-4041.00	CNC Machine Technician	General Atomics Apprenticeship Committee
15-1122.00	COMPUTER SUPPORT SPECIALIST-CYBER SECURITY	ABLE-DISABLED ADVOCACY U.A.C.
15-1151.00	COMPUTER SUPPORT SPECIALIST/HELP DESK-NETWORKING	ABLE-DISABLED ADVOCACY U.A.C.
47-2073.00	Construction Equipment Operator	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. CONSTRUCTION EQUIPMENT OPERATOR, U.A.C.
47-2073.00	Construction Equipment Operator	ASSOCIATED GENERAL CONTRACTORS OF SAN DIEGO, INC. CONSTRUCTION EQUIPMENT OPERATOR J.A.C.
35-2014.00	Cook	Kitchens for Good Culinary Apprenticeship Program for Underserved Populations
39-5012.00	Cosmetologists	TNN Beauty, Barber, Cosmetology, Permanent Makeup Apprenticeship of California and Training Center
39-5012.00	COSMETOLOGY	FourM Education Cosmetology and Barbering Apprenticeship Program
47-2031.01	Drywall / Lather	SAN DIEGO ASSOCIATED GENERAL CONTRACTORS J.A.C.
47-2082.00	DRYWALL FINISHER (TAPER)	SAN DIEGO ASSOCIATED GENERAL CONTRACTORS J.A.C.
47-2031.01	DRYWALL LATHER	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. DRYWALL/LATHER U.A.C.
49-2094.00	Electrical Specialist	General Atomics Apprenticeship Committee

[50] The SOC codes listed are the codes that most closely aligned with the DAS occupation, but the DAS occupation title may not match the SOC occupational title. The names of programs sponsors and all DAS occupational titles were taken directly from DAS. Note that this data was accessed October 23, 2023.

SOC Code	DAS Occupation	Program Sponsor
47-2111.00	ELECTRICIAN (INSIDE WIREMAN)	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. ELECTRICAL U.A.C.
47-2111.00	Electrician (Marine)	SAN DIEGO ELECTRICAL J.A.T.C.
51-2022.00	ELECTRONIC ASSEMBLER	T C I APPRENTICESHIP
49-2022.00	ELECTRONIC SYSTEMS TECHNICIAN (SOUND TECHNICIAN)	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC., ELECTRONIC SYSTEMS TECHNICIAN (SOUND TECH.)
49-2022.00	ELECTRONICS TECHNICIAN	M T S TRANSIT SERVICES JOINT APPRENTICESHIP COMMITTEE
17-3027.00	ENGINEERING TECHNICIAN-BLUE TECHNOLOGIES	T C I APPRENTICESHIP
17-3027.00	ENGINEERING TECHNICIAN-ELECTRONIC/ELECTRICAL	T C I APPRENTICESHIP
17-3027.00	ENGINEERING TECHNICIAN-MECHANICAL	T C I APPRENTICESHIP
17-3027.00	ENGINEERING TECHNICIAN-ROBOTICS/AUTOMATION	T C I APPRENTICESHIP
11-3051.00	Enology Technician	Viticulture and Enology Technician Apprenticeship Program (VETAP)
47-2171.00	Field Ironworker Reinforcing / Field Structural Ironworker	INTERNATIONAL ASSOC. OF BRIDGE,STRUCTURAL,ORNAMENTAL&REINFORCING IRONWORKERS LOCAL UNION 229 J A T C
47-2171.00	Field Ironworker Reinforcing / Field Structural Ironworker	INTERNATIONAL ASSOC. OF BRIDGE,STRUCTURAL,ORNAMENTAL&REINFORCING IRONWORKERS LOCAL UNION 229 J A T C
47-2221.00	Field Ironworker Structural / Field Reinforcing Ironworker	INTERNATIONAL ASSOC. OF BRIDGE,STRUCTURAL,ORNAMENTAL&REINFORCING IRONWORKERS LOCAL UNION 229 J A T C
47-2221.00	Field Ironworker Structural / Field Reinforcing Ironworker	INTERNATIONAL ASSOC. OF BRIDGE,STRUCTURAL,ORNAMENTAL&REINFORCING IRONWORKERS LOCAL UNION 229 J A T C
11-9051.00	Food Service Manager	Kitchens for Good Hospitality Apprenticeship Program
11-1021.00	General Operations Managers	Palomar College/United States Marine Corps Apprenticeship Program
49-9021.01	HEATING, VENTILATION, AIR CONDITIONING WORKER	ASSOCIATED BUILDERS AND CONTRACTORS OF SAN DIEGO, INC. HEATING, VENTILATION, AIR CONDITIONING U.A.C.
49-9021.01	HVAC-R Technician	General Atomics Apprenticeship Committee
49-9021.01	HVACR TECHNICIAN	SAN DIEGO CITY CIVIL SERVICE COMMISSION J.A.C.
47-2111.00	INTELLIGENT TRANSPORTATION SYSTEMS ELECTRICIAN	Intelligent Transportation Systems Joint Apprenticeship Training Committee
51-4041.00	MACHINISTS	VET POWERED, LLC
51-4041.00	MASTER MACHINIST	SOLAR TURBINES INCORPORATED JOINT APPRENTICESHIP COMMITTEE
47-2141.00	PAINTER	SAN DIEGO ASSOCIATED GENERAL CONTRACTORS J.A.C.
39-5091.00	Permanent Makeup	TNN Beauty, Barber, Cosmetology, Permanent Makeup Apprenticeship of California and Training Center
47-2152.01	PIPEFITTER / STEAMFITTER	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. PLUMBING / PIPEFITTING U.A.C.
47-2152.01	PIPEFITTER/ STEAMFITTER	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. PLUMBING / PIPEFITTING U.A.C.
47-2152.02	PLUMBER	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. PLUMBING / PIPEFITTING U.A.C.
47-2152.02	Plumber Maintenance	General Atomics Apprenticeship Committee

SOC Code	DAS Occupation	Program Sponsor
51-4041.00	PRECISION MACHINE TOOL MECHANIC	SOLAR TURBINES INCORPORATED JOINT APPRENTICESHIP COMMITTEE
11-3011.00	PROJECT MANAGEMENT	ABLE-DISABLED ADVOCACY U.A.C.
15-1232.00	Quality Assurance Software Engineer	Creating Coding Careers Apprenticeship Program
47-2181.00	ROOFER	SAN DIEGO CITY CIVIL SERVICE COMMISSION J.A.C.
47-2181.00	ROOFER & WATERPROOFER	SAN DIEGO & IMPERIAL COUNTIES ROOFERS & WATERPROOFERS, J.A.C.
49-9021.02	SERVICE REFRIGERATION & AIR CONDITIONING	SAN DIEGO & IMPERIAL COUNTIES PIPE TRADES SERVICE REFRIGERATION & AIR CONDITIONING J.A.C.
47-2211.00	Sheet Metal Experimental Mechanic	SOLAR TURBINES INCORPORATED JOINT APPRENTICESHIP COMMITTEE
47-2211.00	SHEET METAL WORKER	ASSOCIATED BUILDERS & CONTRACTORS OF SAN DIEGO, INC. SHEET METAL U.A.C.
47-2211.00	Sheet Metal Worker	SAN DIEGO SHEET METAL J.A.T.C.
15-1252.00	Software Developer	Creating Coding Careers Apprenticeship Program
49-2022.00	SOUND TECHNICIAN	San Diego Sound Technician J.A.T.C.
47-2152.01	Steamfitter, Industrial Pipefitter, Pipefitter	SAN DIEGO & IMPERIAL COUNTIES PIPE TRADES J.A.C.
51-4111.00	TOOL AND DIE MAKER	SOLAR TURBINES INCORPORATED JOINT APPRENTICESHIP COMMITTEE
11-9013.02	Viticulture Technician (Farm Manager)	Viticulture and Enology Technician Apprenticeship Program (VETAP)

Imperial County

Exhibit 22. Registered Apprenticeships in Imperial County by Program Sponsors[51]

SOC Code	DAS Occupation	Program Sponsor
51-8021.00	Control Operator (Power Plant Operator)	Imperial Irrigation District (Control Operator)
47-2111.00	Electrician	Imperial Irrigation District (Electrician)
51-8013.00	Hydro Operator	Imperial Irrigation District (Hydro)
17-3023.00	Instrument Technician	Imperial Irrigation District (Instrument Technician)
49-1011.00	Journeyman Power Lineman Upgrade (Management Concepts Of Supervision)	Imperial Irrigation District
49-1011.00	Journeyman Power Lineman Upgrade (Micro Computer Operations)	Imperial Irrigation District
49-9051.00	Line Erector	Irby Construction Company Line Erectors Apprenticeship Program
51-9061.00	Meter Technician	Imperial Irrigation District
49-9041.00	Power House Mechanic (Generation Mechanic)	Imperial Irrigation District (Power House General Mechanic)
49-9051.00	Power Lineman	Imperial Irrigation District
49-2095.00	Relays Technician	Imperial Irrigation District
49-9022.00	S.C.A.D.A./Telecommunications Technician	Imperial Irrigation District (Scada/Telecommunications)
49-2095.00	Substation Electrician (Utility)	Imperial Irrigation District
49-9094.00	Telecommunications Technician	Imperial Irrigation District (Telecommunications Technician)

[51] The SOC codes listed are the codes that most closely aligned with the DAS occupation, but the DAS occupation title may not match the SOC occupational title. The names of programs sponsors and all DAS occupational titles were taken directly from DAS. Note that this data was accessed February 6, 2024.

Appendix D: Pre-Apprenticeship Programs in California

Exhibit 23. Pre-Apprenticeship Programs in California

Pre-apprenticeship Program Name	DAS Occupation	Year Approved
Love Never Fails "ITBiz Tech Academy"	Cybersecurity/IT Technician	2017
Love Never Fails "ITBiz Tech Academy"	IT/ Cyber Security	2017
Associated Builders & Contractors Northern California Chapter (ABC NorCal)	Construction	2019
Associated Builders & Contractors Northern California Chapter (ABC NorCal)	Electrical, Carpentry, Craft Laborer	2019
Cal-JAC Pre-Apprenticeship Academy	EMT	2019
Cal-JAC Pre-Apprenticeship Academy	Fire Service/ Emergency Medical Service	2019
Cal-JAC Pre-Apprenticeship Academy	Paramedic	2019
Carpentry Pre-apprenticeship Training Program - JobTrain	Carpentry	2019
Chaffey College InTech Center Pre-Apprenticeship	Advanced Manufacturing	2019
Chaffey College InTech Center Pre-Apprenticeship	Industrial Mechanic/Industrial Maintenance Electrician	2019
Chaffey College InTech Center Pre-Apprenticeship	Logistics / Distribution	2019
North Bay Trades Introduction Program (NB TIP)	Construction	2019
PWT United Inc.	Ironworker	2019
Rising Sun Center for Opportunity	Construction MC3	2019
Sacramento Building Trades Career Pathways	Ironworker	2019
San Mateo County Inside Wireman Pre-Apprenticeship for IBEW/NECA	Electrical	2019
Santa Clara County Trades Orientation Program	Construction	2019
SLO Partners Pre-Apprenticeship	Manufacturing	2019
SLO Partners Pre-Apprenticeship	Information Communications Technology	2019
SLO Partners Pre-Apprenticeship	Information Technology	2019
Trades Introduction Program / TIP San Mateo	CONSTRUCTION INDUSTRY- MC3	2019
Aero-Flex Pre-Apprenticeship Program	Advance Manufacturing	2020
American Aerospace Technical Academy Pre-Apprentice Program	Non-Destructive Testing Specialist	2020
Columbia College Fire Science Pre-Apprenticeship Initiative	Fire	2020
Cypress Mandela Training Center, Inc.	Carpenters	2020
El Centro Jr./ Sr. High School Pre- Apprenticeship Program	Hospitality	2020

Pre-apprenticeship Program Name	DAS Occupation	Year Approved
Northern California Carpenters Pre-Apprentice	Construction	2020
SoCal Pre-Apprenticeship Program	carpenter	2020
SWAG/ AMS Fulfillment Pre-Apprenticeship Material Coordinator Program	Shipping and Fulfillment	2020
Ventura College Manufacturing Pre-Apprenticeship Program	Advanced Manufacturing	2020
West Oakland Job Resource Center	Transportation, Distribution, Logistics	2020
Women in Non-Traditional Employment Roles	construction and building trades	2020
Antelope Valley Apprenticeship Readiness Program presented by ACT	Advanced Manufacturing	2021
Kollab Youth	STEM	2021
Northern California Construction Training, Inc	Cement Mason	2021
Northern California Construction Training, Inc	Pre-Apprentice Construction	2021
Riverside City College Cook Pre-Apprenticeship Program	Culinary Arts & Pastry Arts	2021
Santa Cruz County Office Of Education Building Trades Pre-apprenticeship Program	Building Trades	2021
Shasta College's Heavy Equipment Logging Operations	Forest & Conservation Workers	2021
Simply Youth Institute's Program SAGACITY	Healthcare	2021
State of California and SEIU Local 1000 Information Technology Pre-Apprenticeship Program	Information Technology	2021
VETAP Pre-Apprenticeship	Agriculture	2021
Viticulture Pre-apprenticeship	Agriculture and Natural Resources	2021
Woz U Technical Pre-Apprenticeship	Application Development	2021
Arts2Work	Media Arts and Creative Technology	2022
BAC 3 JATEC Brick Pre-Apprentice Program	Bricklayer/Stonemason	2022
Central Valley Pre-Apprenticeship Program	Manufacturing Maintenance Mechanic	2022
Construction Technologies Pathway	Construction Technologies	2022
Delete The Divide Technology Professional Intern I	Information Technology	2022
Dev/Mission IT Pre-Apprenticeship Program	Information Technology	2022
Dev/Mission IT Pre-Apprenticeship Program	Robotics	2022
Dev/Mission IT Pre-Apprenticeship Program	Scientific Technological Engineering Arts Mathematics	2022
Early Care & Education Pathways to Success (ECEPTS) Pre-Apprenticeship Program	Early Care & Education	2022
East Los Angeles College – HIT Pre-Apprenticeship Program	Healthcare	2022
Extended Reality (XR) Developer Pre-Apprenticeship	Extended Reality Developers	2022
Grossmont Adult Reentry Education	Food Services (Baking)	2022

Pre-apprenticeship Program Name	DAS Occupation	Year Approved
Grossmont Adult Reentry Education	Food Services (Cook)	2022
Grossmont Adult Reentry Education	Food Services (Food Service Manager)	2022
GUHSD Reentry Education Construction Trades	Construction	2022
Healthy School Food Pathway Pre-Apprenticeship	Healthcare	2022
Homeless Prenatal Program Community Health Worker Pre-Apprenticeship	Community Health Worker	2022
IEConnect	Mechatronics	2022
IEConnect	Transportation	2022
Luther Burbank High School Building Trades Program	Construction/Building Trades	2022
Prep Cook Pre-Apprenticeship Program	Hospitality	2022
San Diego College Continuing Education Foundation (SDCCEF) High Road Apprenticeship Ready Program	Construction	2022
San Diego County Superintendent of Schools-JCCS, CTE Culinary Program	Culinary	2022
Stanislaus County Area Manufacturing & Maintenance Pre-Apprenticeship Program	Manufacturing and Maintenance	2022
WestCal Career Pathway Program	Maritime	2022
AIM-N-Inspire	Film + TV	2023
AIM-N-Inspire	Interactive Gaming	2023
BRIC Foundation Animation, Game Design & VFX Pre-Apprenticeship Program	Animation	2023
BRIC Foundation Animation, Game Design & VFX Pre-Apprenticeship Program	Game Design	2023
BRIC Foundation Animation, Game Design & VFX Pre-Apprenticeship Program	Generalist Animator	2023
BRIC Foundation Animation, Game Design & VFX Pre-Apprenticeship Program	Visual Effects (VFX)	2023
CityBuild Pre-apprenticeship Training Academy "CityBuild Academy"	North America's Building Trades Union	2023
CityLab Professional Pre-Apprenticeship	Introduction to Information Technology	2023
Columbia College Emergency Medical Services Pre-Apprenticeship Initiative	Emergency Medical Services	2023
Drone Applications and Apprenticeship Preparedness (DAAP)	Drone Piloting/ Utility Inspection/ Public Safety	2023
Grossmont Union High School District/ West Hills High School	Construction	2023
Hemet Unified School District Automotive Technology Pre-Apprenticeship Program	Automotive Service Tech and Mechanic	2023
Hemet Unified School District Cybersecurity Pre-Apprenticeship Program	Cyber Security Specialist	2023
Hempanista Corporation dba Chemurgy Training	Chemurgy Training	2023
IEConnect	Building and Construction Trades	2023
Roots of Success Pre-Apprenticeship	Environmental Specialist	2023
Sacramento Regional Conservation Corps	Landscape Management Technician (LMT)	2023
San Joaquin County Apprentice Readiness Program	North American Building Trades MC-3	2023
Venice Arts Digital Video Editor Pre-Apprenticeship Program	Digital Video Editor	2023

Appendix E: Regional Community College Apprenticeship Programs

Exhibit 24. Regional Community College Apprenticeship Programs By Colleges

College	Program Title	TOP Code	# Units	Year Approved
Grossmont	Chef Apprenticeship	1306.30 Culinary Arts	35	2008
Grossmont	Chef Apprenticeship	1306.30 Culinary Arts	35	2008
Imperial Valley	Apprenticeship: Meter Technician	0934.20 Industrial Electronics	32	2006
Imperial Valley	Apprenticeship: Meter Technician	0934.20 Industrial Electronics	32	2006
Imperial Valley	Apprenticeship: SCADA/Telecommunications Technician	0934.30 Telecommunications Technology	32	2006
Imperial Valley	Apprenticeship: SCADA/Telecommunications Technician	0934.30 Telecommunications Technology	32	2006
Imperial Valley	Apprenticeship: Electrician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Electrician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Generation Mechanic	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Generation Mechanic	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Power Lineperson	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Power Lineperson	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Relays Technician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Relays Technician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Substation - Electrician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Substation - Electrician	0934.40 Electrical Systems and Power Transmission	32	2006
Imperial Valley	Apprenticeship: Instrument Technician	0934.30 Telecommunications Technology	32	2011
Imperial Valley	Apprenticeship: Telecommunications Technician	0934.30 Telecommunications Technology	32	2011
Imperial Valley	Apprenticeship: Control Operator	0934.40 Electrical Systems and Power Transmission	32	2011
Imperial Valley	Apprenticeship: Hydro Operator	0934.40 Electrical Systems and Power Transmission	32	2011
Palomar	Apprenticeship-Electrician	0952.20 Electrical	56	1988
Palomar	Apprenticeship-Electrician	0952.20 Electrical	56	1988
Palomar	Apprenticeship-Sheet Metal	0956.40 Sheet Metal and Structural Metal	55	1990
Palomar	Apprenticeship-Sheet Metal	0956.40 Sheet Metal and Structural Metal	55	1990
Palomar	Apprenticeship-Sound and Communication Systems Installer	0952.20 Electrical	40	1995
Palomar	Apprenticeship-Sound and Communication Systems Installer	0952.20 Electrical	40	1995

College	Program Title	TOP Code	# Units	Year Approved
Palomar	Apprenticeship-Sound Technician	0952.20 Electrical	44	2004
Palomar	Apprenticeship-Sound Technician	0952.20 Electrical	44	2004
Palomar	Apprenticeship-Inside Wireman	0952.20 Electrical	56	2006
Palomar	Apprenticeship-Inside Wireman	0952.20 Electrical	56	2006
Palomar	Apprenticeship-Acoustical Installer	0952.80 Drywall and Insulation	26.5	2006
Palomar	Apprenticeship-Acoustical Installer	0952.80 Drywall and Insulation	26.5	2006
Palomar	Apprenticeship-Plasterer	0952.60 Masonry, Tile, Cement, Lath and Plaster	25	2007
Palomar	Apprenticeship-Plasterer	0952.60 Masonry, Tile, Cement, Lath and Plaster	25.5	2007
Palomar	Apprenticeship-Intelligent Transportation Systems	0952.20 Electrical	48	2018
Palomar	Apprenticeship-Intelligent Transportation Systems	0952.20 Electrical	48	2018
Palomar	Pre-Apprenticeship	0956.70 Industrial and Occupational Safety and Health	-	2018
Palomar	Apprenticeship-Carpentry	0952.10 Carpentry	28	-
Palomar	Apprenticeship-Carpentry	0952.10 Carpentry	28	-
Palomar	Apprenticeship-Drywall/Lather	0952.80 Drywall and Insulation	21/24.5	-
Palomar	Apprenticeship-Drywall/Lather	0952.80 Drywall and Insulation	21/24.5	-
San Diego City	San Diego Gas and Electric Company Lineman Apprenticeship	0934.40 Electrical Systems and Power Transmission	30	1981
San Diego City	San Diego Gas and Electric Company Lineman Apprenticeship	0934.40 Electrical Systems and Power Transmission	30	1981
San Diego City	San Diego Trolley Inc Wayside Lineman Apprenticeship	0947.40 Railroad and Light Rail Operations	33/34	1981
San Diego City	San Diego Trolley Inc Wayside Lineman Apprenticeship	0947.40 Railroad and Light Rail Operations	33/34	1981
San Diego City	Solar Turbines, Incorporated Apprenticeship	0999.00 Other Engineering and Related Industrial Technologies	29	1995
San Diego City	Solar Turbines, Incorporated Apprenticeship	0999.00 Other Engineering and Related Industrial Technologies	29	1995
San Diego City	Communications Technician Apprenticeship	0934.40 Electrical Systems and Power Transmission	36	2004
San Diego City	Communications Technician Apprenticeship	0934.40 Electrical Systems and Power Transmission	36	2004
San Diego City	Apprenticeship: Honeywell Tool & Die	0956.30 Machining and Machine Tools	23	2004
San Diego City	Apprenticeship: Honeywell Tool & Die	0956.30 Machining and Machine Tools	23	2004
San Diego City	San Diego Transit Electronic Technician Apprenticeship	0934.00 Electronics and Electric Technology	32	2009
San Diego City	San Diego Transit Electronic Technician Apprenticeship	0934.00 Electronics and Electric Technology	32	2009
San Diego City	San Diego Trolley Inc Light Rail Vehicle Lineman Apprenticeship	0947.40 Railroad and Light Rail Operations	32	2019
San Diego City	San Diego Trolley Inc Light Rail Vehicle Lineman Apprenticeship	0947.40 Railroad and Light Rail Operations	32	2019
San Diego City	San Diego Trolley Inc Revenue Maintainer Apprenticeship	0947.40 Railroad and Light Rail Operations	36/37	2019

College	Program Title	TOP Code	# Units	Year Approved
San Diego City	San Diego Trolley Inc Revenue Maintainer Apprenticeship	0947.40 Railroad and Light Rail Operations	36/37	2019
San Diego City	General Atomics Electrical Specialist Apprenticeship	0934.00 Electronics and Electric Technology	57.5/59	2022
San Diego City	General Atomics HVAC-R Technician Apprenticeship	0946.00 Environmental Control Technology	60.5/62	2022
San Diego City	General Atomics CNC Machine Technician Apprenticeship	0956.00 Manufacturing and Industrial Technology	55.5/57	2022
San Diego Miramar	Equipment Mechanic Apprenticeship	0947.20 Heavy Equipment Maintenance	27	2002
San Diego Miramar	Equipment Mechanic Apprenticeship	0947.20 Heavy Equipment Maintenance	27	2002
San Diego Miramar	San Diego Transit General Mechanic Apprenticeship	0947.00 Diesel Technology	24	2009
San Diego Miramar	San Diego Transit General Mechanic Apprenticeship	0947.00 Diesel Technology	24	2009
San Diego Miramar	HAWTHORNE TECHNICIAN APPRENTICESHIP (HTAP)	0947.00 Diesel Technology	32	2023

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San Diego & Imperial Center of Excellence

- Dr. Tina Ngo Bartel, Director
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San Diego & Imperial Regional Consortium

- Dr. Danene Brown, Regional Chair
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- Kevin McMackin, Director of Strategic Partnerships

IMPORTANT DISCLAIMERS

All representations included in this report have been produced from primary research and a review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the San Diego & Imperial Center of Excellence (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.