

Basic Framing and Carpentry

Inland Empire/Desert Region (Riverside and San Bernardino counties combined)

Summary

- The knowledge, skills, and abilities provided by the community college carpentry and mill and cabinet work programs lead to five distinct occupations, collectively referred to as the *carpentry occupational group* in this report.
- Employment for the *carpentry occupational group* is expected to **increase by 5% between 2018 and 2023**. A total of **2,772 annual job openings** will be available each year over the five-year timeframe.
- The median hourly wages for each occupation in this group ranges between \$13.09 and \$23.96 per hour. **Three of the five occupations report median hourly wages above \$21.78 per hour**, the self-sustainable hourly wage estimate for a single adult with one child.
- There were **no credentials issued** from regional community college *carpentry and mill and cabinet work* programs over the last three academic years.

Introduction

This report provides data on programs and occupations related to basic framing and carpentry. The most closely related California Community College programs are:

- Carpentry (TOP 0952.10)
- Mill and Cabinet Work (0952.50)

The *carpentry* program prepares students for employment through the instruction of the layout, fabrication, erection, and installation of structures using common systems of framing, construction materials, estimating, and blueprint reading. The *mill and cabinet work* program prepares students for employment through instruction related to cutting, shaping, assembly, and finishing of wood and related materials according to designs and specifications (Taxonomy of Programs, 2012).

The knowledge, skills, and abilities trained by these programs lead to the following occupations, collectively referred to as the *carpentry occupational group*:

- Cabinetmakers and Bench Carpenters (SOC 51-7011)
- Carpenters (47-2031)
- Model Makers, Wood (51-7031)
- Patternmakers, Wood (51-7032)
- Sawing Machine Setters, Operators, and Tenders, Wood (51-7041)

Job Opportunities

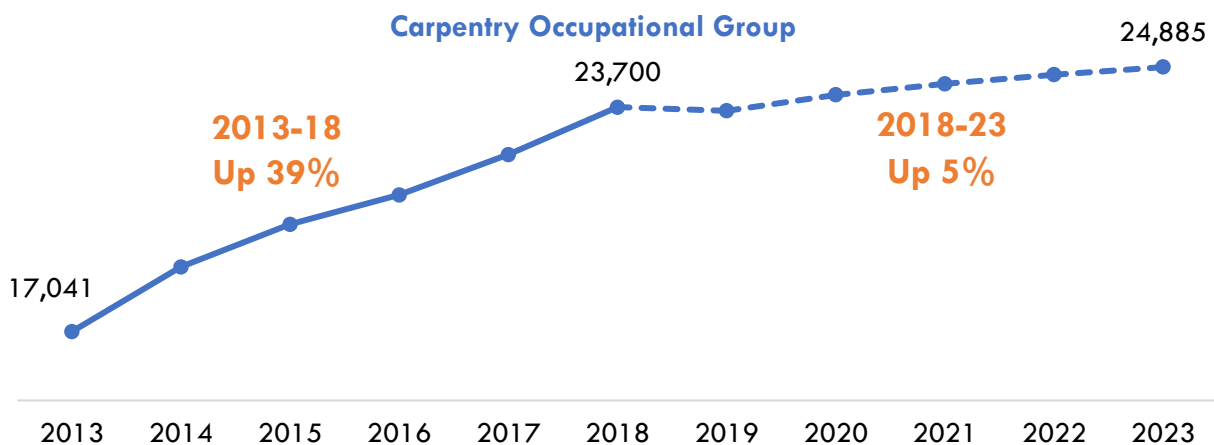
In 2018, there were 23,700 jobs in the *carpentry occupational group* in the Inland Empire/Desert region (IEDR). This occupational group is projected to increase employment by 5% through 2023. Employers are expected to have 13,862 job openings over the next five years to fill new jobs and backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Exhibit 1 displays five-year projected job growth, and Exhibit 2 displays historical (2013 to 2018) and projected (2018-2023) jobs for the *carpentry occupational group*.

Exhibit 1: Five-year projections for each occupation in the carpentry occupational group

Occupation	2018 Jobs	2023 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Carpenters	21,740	22,971	6%	12,756	2,551	22%
Cabinetmakers and Bench Carpenters	1,523	1,463	(4%)	828	166	28%
Sawing Machine Setters, Operators, and Tenders, Wood	411	426	4%	262	52	24%
Model Makers, Wood	16	15	(6%)	<10	Insf. Data	Insf. Data
Patternmakers, Wood	10	10	0%	<10	Insf. Data	Insf. Data
Total	23,700	24,885	5%	13,862	2,772	23%

Source: EMSI 2020.1

Exhibit 2: Historical and projected jobs for the carpentry occupational group, 2013 – 2023



Source: EMSI 2020.1

Job Postings

Exhibit 3 displays the number of job ads posted during the last 12 months, along with the regional and statewide average time to fill for the *carpentry occupational group*. It is important to note limitations when examining employer job ads. Job postings data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that “just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online” (Carnevale Et al., 2014). This may be especially true for occupations that find employment through union representation; the carpenter occupation is a good example.

On average, local employers fill online job postings for the *carpentry occupational group* within 40 days. This regional average is seven days shorter than the statewide average of 47 days, indicating that it is easier for local employers to fill open positions than other employers in California as a whole. There were no regional job ads for *model makers, wood* and *patternmakers, wood*.

Exhibit 3: Job ads and time to fill, Mar 2019 – Feb 2020

Occupation	Job Ads	Regional Average Time to Fill (Days)	California Average Time to Fill (Days)
Carpenters	227	41	48
Cabinetmakers and Bench Carpenters	54	37	42
Sawing Machine Setters, Operators, and Tenders, Wood	23	34	39
Model Makers, Wood	0	-	49
Patternmakers, Wood	0	-	-
Total	304	40	47

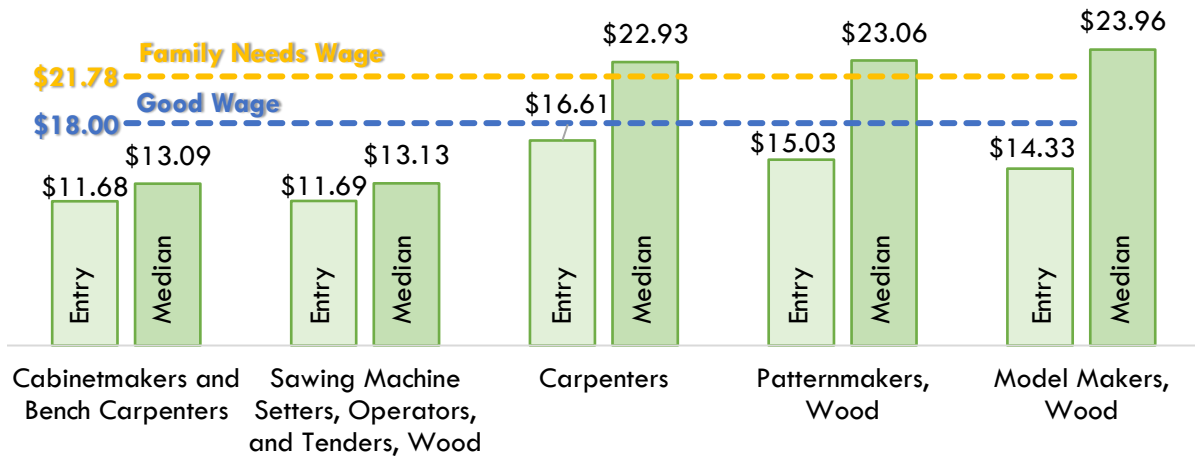
Source: Burning Glass – Labor Insights

Earnings and Benefits

Community colleges should ensure their training programs lead to employment opportunities that provide a self-sustainable level of income. The Brookings Institute in their *Advancing Opportunity in California’s Inland Empire* report found that a “good job” wage in the region is above the \$18.00 per hour, or \$37,440 per year (Shearer, Shah & Gootman, p. 25). The Family Needs Calculator estimates that a self-sustainable wage for a single adult with one school-age child is \$21.78 per hour (Pearce & Manzer, 2018).

Three of the five occupations in this group have a median hourly wage above the Family Needs Calculator self-sustainability rate. Additionally, these median wages exceed the Brookings “good wage.” Wages for cabinetmakers and bench carpenters and sawing machine setters, operators, and tenders, wood are below the regional self-sustainability rate regardless of experience. Exhibit 4 displays the IEDR hourly earnings for each occupation.

Exhibit 4: Hourly earnings for the carpentry occupational group



Source: EMSI 2020.1

According to occupational guides developed by the California Labor Market Information Division, benefits for the carpentry occupational group vary depending on the employer. Generally, union workers include medical, dental, and life insurance, as well as other benefits (Detailed Occupational Guides, 2020).

Employers, Skills, Education, and Work Experience,

Exhibit 5 displays the employers posting the most job ads for the carpentry occupational group during the last 12 months in the IEDR. There were too few job postings for three of the occupations in this group to provide reliable job posting results.

Exhibit 5: Employers posting the most job ads for carpentry occupations, Mar 2019 – Feb 2020

Occupation	Employers
Carpenters (n=113)	<ul style="list-style-type: none"> Eleven Wester Builders, Inc. QCP Concrete Solutions Dreamstyle Remodeling, Inc.
Cabinetmakers and Bench Carpenters (n=48)	<ul style="list-style-type: none"> American Woodmark Corporation KCI Cabinets

Occupation	Employers
Sawing Machine Setters, Operators, and Tenders, Wood (n=4)	• -
Model Makers, Wood (n=0)	• -
Patternmakers, wood (n=0)	• -

Source: Burning Glass – Labor Insights

Exhibit 6 displays a sample of specialized and employability skills that employers are seeking when looking for workers to fill positions in the *carpentry occupational group*. Specialized skills are occupation-specific skills that employers are requesting for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is commonly referred to as “soft skills.” The skills requested in job postings may be utilized as a helpful guide for curriculum development. There were too few job postings for two of the occupations examined in this group to provide reliable job posting results.

Exhibit 6: Sample of in-demand skills from employer job ads, Mar 2019 – Feb 2020

Occupation	Specialized Skills	Employability Skills
Carpenters (n=166)	<ul style="list-style-type: none"> • Repair • Drywall • Framing • Schematic Diagrams 	<ul style="list-style-type: none"> • Physical Abilities • English • Organizational Skills • Detail-Oriented
Cabinetmakers and Bench Carpenters (n=38)	<ul style="list-style-type: none"> • Hand Tools • Power Tools • Record Keeping • Installation 	<ul style="list-style-type: none"> • English • Detail-Oriented • Bilingual • Organizational Skills
Sawing Machine Setters, Operators, and Tenders, Wood (n=16)	<ul style="list-style-type: none"> • Hand Tools • Debris and Litter Control • Customer Service • Forklift Operation 	<ul style="list-style-type: none"> • Physical Abilities • Work Area Maintenance • Trouble Shooting • Communication Skills
Model Makers, Wood (n=0)	• -	• -

Occupation	Specialized Skills	Employability Skills
Patternmakers, Wood (n=0)	• -	• -

Source: Burning Glass – Labor Insights

Exhibit 7 displays the entry-level education typically required to enter each occupation according to the Bureau of Labor Statistics (BLS), educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census (2016-17) and the real-time minimum advertised education requirement from employer job ads. There were too few job postings for three of the occupations in this group to provide reliable job posting results.

Exhibit 7: Typical entry-level education, educational attainment, and minimum advertised education requirements for the carpentry occupational group, Mar 2019 – Feb 2020

Occupation	Typical Entry-Level Education Requirement	CC-Level Educational Attainment*	Real-Time Minimum Advertised Education Requirement			
			Number of Job Ads	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Carpenters	High school diploma or equivalent	25%	31	100%	-	-
Cabinetmakers and Bench Carpenters	High school diploma or equivalent	26%	29	100%	-	-
Sawing Machine Setters, Operators, and Tenders, Wood	High school diploma or equivalent	14%	2	-	-	-
Model Makers, Wood	High school diploma or equivalent	26%	0	-	-	-
Patternmakers, Wood	High school diploma or equivalent	26%	0	-	-	-

Source: EMSI 2020.1, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Credential or Some Postsecondary Coursework

Exhibit 8 displays the work experience typically required to enter each occupation and the real-time work experience requirements from employer job ads. Most employers were looking for a candidate with three to five years of work experience.

Exhibit 8: Work experience required and real-time work experience requirements, Mar 2019 – Feb 2020

Occupation	Work Experience Typically Required	Real-Time Work Experience			
		Number of Job Ads	0 – 2 years	3 – 5 years	6+ years
Carpenters	None	78	33%	59%	8%
Cabinetmakers and Bench Carpenters	None	17	53%	35%	12%
Sawing Machine Setters, Operators, and Tenders, Wood	None	3	-	-	-
Model Makers, Wood	None	0	-	-	-
Patternmakers, Wood	None	0	-	-	-

Source: EMSI 2020.1, Burning Glass – Labor Insights

Program Outcomes

Between 2015 and 2018, there were no student completions in the *carpentry* and *mill and cabinet work* programs. While there were no completions during this timeframe, some data is available for the local region and California. California program outcome data may provide a useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP codes and region is provided in Exhibits 9 and 10. The outcome methodology is available in the appendix section of this report.

Exhibit 9: 0952.10 – Carpentry strong workforce program outcomes

Strong Workforce Program Metrics: 0952.10 – Carpentry Academic Year 2016 -17, unless noted otherwise	Inland Empire/Desert Region	California
Course enrollments	62	21,031
Completed 9+ career education units in one year (2017-18)	-	8%
Economically disadvantaged students	29%	48%
Students who attained a noncredit workforce milestone in a year	-	54%
Students who earned a degree, certificate, or attained apprenticeship (2017-18)	-	633
Transferred to a four-year institution (transfers)	-	14
Job closely related to the field of study (2015-16)	-	81
Median annual earnings (all exiters)	-	\$54,516
Median change in earnings (all exiters)	-	90%
Attained a living wage (completers and skills-builders)	-	67%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Exhibit 10: 0952.50 – Mill and cabinet work strong workforce program outcomes

Strong Workforce Program Metrics: 0952.50 – Mill and Cabinet Work Academic Year 2016 -17, unless noted otherwise	Inland Empire/Desert Region	California
Course enrollments	88	2,614
Completed 9+ career education units in one year (2017-18)	35%	22%

Strong Workforce Program Metrics: 0952.50 – Mill and Cabinet Work Academic Year 2016 -17, unless noted otherwise	Inland Empire/Desert Region	California
Economically disadvantaged students	49%	42%
Students who attained a noncredit workforce milestone in a year	-	37%
Students who earned a degree, certificate, or attained apprenticeship (2017-18)	-	74
Job closely related to the field of study (2015-16)	-	55%
Median annual earnings (all exiters)	\$19,712	\$51,168
Median change in earnings (all exiters)	-	19%
Attained a living wage (completers and skills-builders)	-	65%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Recommendation

The knowledge, skills, and abilities provided by community college *carpentry* and *mill and cabinet work* programs lead to five distinct occupations, depending on the focus of the training offered. These occupations combined will have 2,772 annual job openings over the next five years. The median, 50th percentile hourly wage for each occupation ranges between \$13.09 and \$23.96 per hour. Three out of the five occupations in this report exceeded the self-sustainability standard for a household with a single adult and one child.

Inland Empire/Desert community colleges are reporting enrollments in *carpentry* and *mill and cabinet work* programs, but they currently have no reported *carpentry* or *mill and cabinet work* program completions. Strong workforce program metrics across the state suggest that students exiting from these programs are earning a median wage that exceeds the regional self-sustainability standard. Based on this analysis, there appears to be an opportunity to create new or expand existing programs to meet employer demand for more workers.

Colleges considering these programs should meet with relevant employers, and unions, to understand their demand for more workers and the specific skills, licensing, and credentials needed for gainful employment in this field.

Contact

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Appendix: Occupation definitions, sample job titles, five-year projections for carpentry occupations

Occupation Definitions (SOC) code), Education and Training Requirement, Community College Educational Attainment

Carpenters (47-2031)

Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Includes brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways.

Sample job titles: Apprentice Carpenter, Carpenter, Cabinet Maker, Carpenter Foreman, Carpentry Foreman, Concrete Carpenter, Construction Superintendent, Construction Worker, Framing Worker, Production Worker, Journeyman Carpenter, Rough Carpenter, Union Carpenter

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Apprenticeship

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 25%

Cabinetmakers and Bench Carpenters (51-7011)

Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products.

Sample job titles: Cabinet Assembler, Cabinet Builder, Cabinet Installer, Cabinetmaker, Cutter, Double End Tenon Operator, Frame Builder, Framing Worker, Machine Operator, Woodworker

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Between one and twelve months of on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 26%

Model Makers, Wood (51-7031)

Construct full-size and scale wooden precision models of products. Includes wood jig builders and loft workers.

Sample job titles: Craftsman, Model Builder, Model Maker, Product Development Carpenter, Sample Builder, Sample Maker, Sample Worker

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Between one and twelve months of on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 26%

Patternmakers, Wood (51-7032)

Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings.

Sample job titles: Apprentice Pattern Maker, Journeyman Patternmaker, Mold Maker, Pattern Maker, Wood Pattern Maker

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Between one and twelve months of on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 26%

Sawing Machine Setters, Operators, and Tenders, Wood (51-7041)

Set up, operate, or tend wood sawing machines. May operate CNC equipment. Includes lead sawyers.

Sample job titles: Bandmill Operator, Cut Off Saw Operator, Edgerman, Knot Saw Operator, Panel Saw Operator, Planer, Resaw Operator, Rip Saw Operator, Saw Operator, Sawyer

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Between one and twelve months of on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 14%

Appendix: Program Outcome Methodology

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from records provided by California's Employment Development Department's Unemployment Insurance database. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric (e. g., completers, skills-builders, and all exiters) please see the web link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2020a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2020).

Table 1: 2018 to 2023 job growth, wages, education, training, and work experience required for the carpentry occupational group, IEDR

Occupation (SOC)	2018 Jobs	5-Yr Change	5-Yr % Change	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage Range (25 th to 75 th percentile)	Median Hourly Wage (50 th percentile)	Average Annual Earnings	Typical Entry-Level Education & On-The-Job Training Required	Work Experience Required
Carpenters (47-2031)	21,740	1,231	6%	2,551	\$16.61 to \$29.57	\$22.93	\$52,200	High school diploma or equivalent & Apprenticeship	None
Cabinetmakers and Bench Carpenters (51-7011)	1,523	(60)	(4%)	166	\$11.68 to \$18.01	\$13.09	\$32,700	High school diploma or equivalent & 1 to 12 months	None
Sawing Machine Setters, Operators, and Tenders, Wood (51-7041)	411	15	4%	52	\$11.69 to \$14.98	\$13.13	\$29,100	High school diploma or equivalent & 1 to 12 months	None
Model Makers, Wood (51-7031)	16	(1)	(6%)	Insf. Data	\$14.33 to \$36.20	\$23.96	\$61,200	High school diploma or equivalent & 1 to 12 months	None
Patternmakers, Wood (51-7032)	10	0	0%	Insf. Data	\$15.03 to \$34.12	\$23.06	\$61,200	High school diploma or equivalent & 1 to 12 months	None
Total	23,700	1,185	5%	2,772	-	-	-	-	-

Source: EMSI 2020.1