



California Manufacturing Jobs in Demand

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KEY FINDINGS

The purpose of this study was to examine the current demand for jobs and skills in California's manufacturing industry, using real-time access to job ads being posted online. Because of this particular sector's fluidity, using real-time data to give stakeholders an accurate, point-in-time snapshot of its job demand characteristics has many potential benefits. Real-time job demand data allow employers to identify the emerging skills coveted by industry leaders, job seekers to discern the location of current manufacturing hiring "hot spots," workforce developers to analyze various up-to-the-minute job trends, and training providers to tailor their programs and curriculum to better satisfy the existing job demand. The real-time job ads data were extracted from the Conference Board's Help Wanted Online™ (HWOL) analytic software. The following are key findings based on an analysis of 120 days of job listings posted online between October 2011 and February 2012, as compared to the same period from the previous year:

- California's manufacturing industry may be rebounding, based on an analysis of 120 days of advertised job listings compared to the prior year's job ads for the same period. Total job listings rose in all major manufacturing groups: production (up 18.8 percent), logistics (up 16.3 percent), and engineering (up 8.6 percent).
- The trend of using temporary and employment placement agencies to fill new and vacant positions continues, no doubt due to employers' hesitancy to hire full-time, permanent employees as the state climbs out of a recession.
- Approximately one in four of the 1.14 million job listings posted in California during the test period were occupations common to manufacturing.
- Production jobs continue to be heavily concentrated in the southern region of the state, while engineering jobs remain strong in the San Francisco Bay Area.
- Production job listings in California show employers are currently requiring more experience and higher levels of formal education than what is typically required at the national level. This rise in experience requirements was particularly noticeable in listings for industrial production managers and first-line supervisors of production workers.
- Occupations faring the best for full-time job openings were engineering and production, while truck drivers, secretaries, and customer service representative listings showed the highest percentage of part-time listings.
- Of the 281,461 job listings identified as manufacturing related, less than half (124,669) were specific to engineering, logistics, and production activities. The larger remainder fell within occupations common across all industries, such as customer service representatives and executive secretaries.
- The highest employer demand for skills and tools in manufacturing-related job listings were quality assurance, product management, setup, SQL, UNIX, CAD, and SolidWorks.
- Single occupations with the largest share of long-running listings (over 90 days) were computer software systems engineers and heavy truck drivers.
- Listings for part-time jobs in manufacturing industries accounted for 11 percent of all manufacturing job listings, fewer than the average overall 13 percent identified in all industries during the period.
- Engineering occupations make up only 2 percent of California's estimated employment; yet, they represent 7 percent of all HWOL job listings during the test period. Conversely, production occupations comprise 7 percent of California's estimated employment; yet, they represent only 3 percent of total job listings (see Figure 2).

INTRODUCTION

This study seeks to identify the most current demand for jobs and skills in California’s manufacturing industry. The study is modeled in part on a November 2011 national report written by the Center for Regional Economic Competitiveness (CREC), entitled [U.S. Manufacturing Jobs: Where Companies Are Hiring](#). Whereas the CREC study was based on national real-time data over a six-month period, this report was based on analysis of 120 days of California job listings posted online between October 2011 and February 2012 as compared to the same period from the previous year using the Conference Board’s Help Wanted OnLine™ (HWOL) analytics tool.

DEFINING MANUFACTURING OCCUPATIONAL GROUPS

Job listings were classified into four broad occupational groups within manufacturing: engineering, production, logistics, and a miscellaneous group of “Other” occupations common to manufacturing. Occupations were selected based on 2010 statewide employment and staffing patterns within the manufacturing industry. Below is a short description of the four manufacturing occupational groups. Figure 1 shows the groups and sample occupations within each group.

- Engineering occupations are jobs involved in the design, development, testing, and evaluation of products and components, including software for computer-driven production machines. This occupational group also includes engineering support occupations, such as technicians and drafters.
- Production occupations are jobs generally unique to the manufacturing industry. Their work involves creating new products from raw and component materials.
- Logistics occupations are jobs involved in the transportation, storage, and distribution of raw materials and manufactured products.
- “Other” manufacturing occupations are jobs involved in the support, finance, and sales aspects of the manufacturing industry. These occupations can be found in most other industries and are difficult to isolate.

Figure 1: Manufacturing Occupational Groups

Occupational Group	Sample Occupations
Engineering Occupations	<ul style="list-style-type: none"> • Industrial Engineers • Software Applications Engineers • Mechanical Engineering Technicians
Production Occupations	<ul style="list-style-type: none"> • Machinists • Production Worker Supervisors • Team Assemblers
Logistics Occupations	<ul style="list-style-type: none"> • Logisticians • Heavy Truck Drivers
“Other” Manufacturing Occupations	<ul style="list-style-type: none"> • Wholesale Sales Representatives • Marketing Managers • Customer Service Representatives

JOB LISTINGS IN PERSPECTIVE – LABOR MARKET INFORMATION

Figure 2 shows overall job listings posted within the four manufacturing occupational groups during the review period. It then compares these totals to the groups' share in California's estimated employment. These data show that engineering occupations make up only 2 percent of California's estimated employment; yet, they represent 7 percent of all job listings over the review period. The converse is true of production occupations, while the logistics and "other" categories posted similar shares. To compare job listing totals with labor market information for all selected manufacturing occupations, see Appendices A-D.

Figure 2: Comparison of Job Listings with California Estimated Employment

Occupational Group	Total Job Listings ¹	Percent of all Job Listings ²	Estimated CA 2010 Employment ³	Percent of CA 2010 Employment
Engineering Occupations	67,248	7.0	349,200	2.0
Production Occupations	30,402	3.0	1,030,600	7.0
Logistics Occupations	27,019	3.0	695,500	4.0
"Other" Occupations Common to Mfg.	156,792	16.0	2,449,900	16.0

¹The Conference Board Help Wanted OnLine™ Data Series; 120-day period ending Feb. 2, 2012; ²Data are rounded; ³California Employment Development Department, Projections of Employment 2010-2012.

TOP MANUFACTURING JOB LISTINGS BY OCCUPATIONAL GROUP

Engineering Job Listings

California may lead the nation in innovation, but it is engineers who design and transform ideas into products or components, thus creating the need for a host of jobs in manufacturing as well as its supply chain. The demand for engineers continues, but this analysis revealed a remarkable demand for workers knowledgeable in applications software design and production within this category. In fact, nearly 50 percent of all engineering job listings during the review period were for applications software engineers. Job listings for industrial engineers, mechanical engineers, and electrical engineers also posted significant numbers during this period. Accordingly, the technical support occupations for these engineering positions, including electrical, electronic, and industrial engineering technicians, also rose in proportion to their related journey-level positions.

Due to the higher education requirements associated with this occupational group, there is a clear delineation between the number of contract job advertisements and the number of corresponding part-time jobs. Figure 3 shows the top five engineering occupations in demand during the review period. A more detailed listing of engineering occupations in demand is provided in Appendix E.

Figure 3: Distribution of Engineering Job Listings

Engineering Job Listings CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	Total Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Computer Software Engineers, Applications	27,849	8.1	6.5	16.4
Industrial Engineers	10,760	19.0	4.4	20.5
Computer Software Engineers, Systems Software	6,055	5.0	4.1	16.0
Mechanical Engineers	4,365	10.8	4.4	21.0
Electrical Engineers	3,708	2.5	5.0	20.4

Source: The Conference Board Help Wanted Online™ Data Series; *as compared to the same 120-day period from the previous year.

Production Job Listings

Production jobs accounted for considerably fewer online job listings during the review period (30,042) than job listings in engineering and the miscellaneous “other” categories. Yet, the largest year-over increase in job listings occurred in this group, up 20.8 percent overall during the same period. These numbers suggest California’s manufacturing output may be on the road to recovery; however, it is unknown whether the increase reflects the emergence of new manufacturers, a rebound in existing manufacturing firms, or a combination of both.

Figure 4 displays the top five production occupations in demand during the review period. These numbers are tempered with the knowledge that openings for this group of occupations are typically filled either through union hiring halls or not advertised online. Appendix F provides a detailed listing of the twenty-five top production occupations in rank order of job listings.

Figure 4: Distribution of Production Job Listings

Production Job Listings CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	Total Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
First-Line Supervisors/Managers of Production and Operating Workers	7,033	19.3	7.6	12.2
Machinists	2,195	27.8	3.7	12.3
Inspectors, Testers, Sorters, Samplers, and Weighers	2,099	20.6	4.4	20.1
Production, Planning, and Expediting Clerks	2,056	10.7	8.5	18.7
Helpers—Production Workers	1,425	37.5	9.1	11.2

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

Logistics Job Listings

Logistics occupations are indispensable components of the manufacturing industry. By organizing the supply chain, transporting raw materials and finished products, and unloading cargo, these workers provide critical support for the production and engineering sectors of the manufacturing industry. Among the jobs with the greatest number of job listings (10,835) in logistics is the heavy and tractor-trailer truck driver occupation. Figure 5 shows the top five logistics occupations in demand during the review period and Appendix G provides a detailed listing of the ten top logistics occupations in rank order of job listings.

Unlike the engineering occupations, logistics job listings showed no clear distinction between part-time and contract jobs. The exceptions to this trend were the relatively lower-skilled light truck drivers (31.7 percent part-time versus just 7.0 percent contract) and the usually college-educated logisticians (22.9 percent contract versus 7.1 percent part-time).

Overall, logistics job listings rose 16.3 percent as compared to the same 120-day period from the previous year, the highest increase among the four occupational groups in this report. The aforementioned heavy and tractor-trailer truck driver occupation spearheaded this significant percentage increase, accounting for an impressive 37.5 percent change over the same period last year.

Figure 5: Distribution of Logistics Job Listings

Logistics Job Listings CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	# Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032)	10,835	37.5	13.2	15.8
Truck Drivers, Light or Delivery Services (SOC 53-3033)	3,861	13.4	31.7	7.0
First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators (SOC 53-1031)	3,134	17.2	13.7	12.5
Laborers and Freight, Stock, and Material Movers (Hand) (SOC 53-7062)	2,874	-6.3	17.0	7.9
Shipping, Receiving, and Traffic Clerks (SOC 43-5071)	1,543	0.7	12.2	10.1

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

“Other” Manufacturing Job Listings

The “other” category consists of occupations integral to the daily operation of firms in the manufacturing industry. Occupations such as wholesale sales representatives, accountants and auditors, and general maintenance and repair workers, all contribute to the successful operation of any manufacturing firm. Due to the universal nature of these occupations, the “other” job listings represent new jobs and vacancies across all industries. Figure 6 shows the top five “other” occupations in demand during the review period.

Figure 6: Distribution of “Other” Manufacturing Job Listings

Job Listings for Other Manufacturing Occupations CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	Total Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Executive Secretaries and Administrative Assistants (SOC 43-6011)	21,677	5.4	20.0	11.2
Marketing Managers (SOC 11-2021)	19,515	-0.2	4.7	11.3
Customer Service Representatives (SOC 43-4051)	17,251	1.7	19.9	12.2
Accountants and Auditors (SOC 13-2011)	16,700	9.7	6.4	14.5
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012)	12,599	0.9	10.1	8.4

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

Compared to the same 120-day period from the previous year, job listings for the occupations within this occupational group were almost unanimously higher, led by janitors and cleaners (up 14.5 percent). General maintenance and repair workers (11.1 percent), first-line supervisors of office workers (10.4 percent), accountants and auditors (9.7 percent), and general and operations managers (8.7 percent) round out the top 5 in highest percentage increase within this group. Appendix H provides a detailed listing of the fifteen top “other” occupations in rank order of job listings.

GEOGRAPHIC LOCATION OF JOB LISTINGS

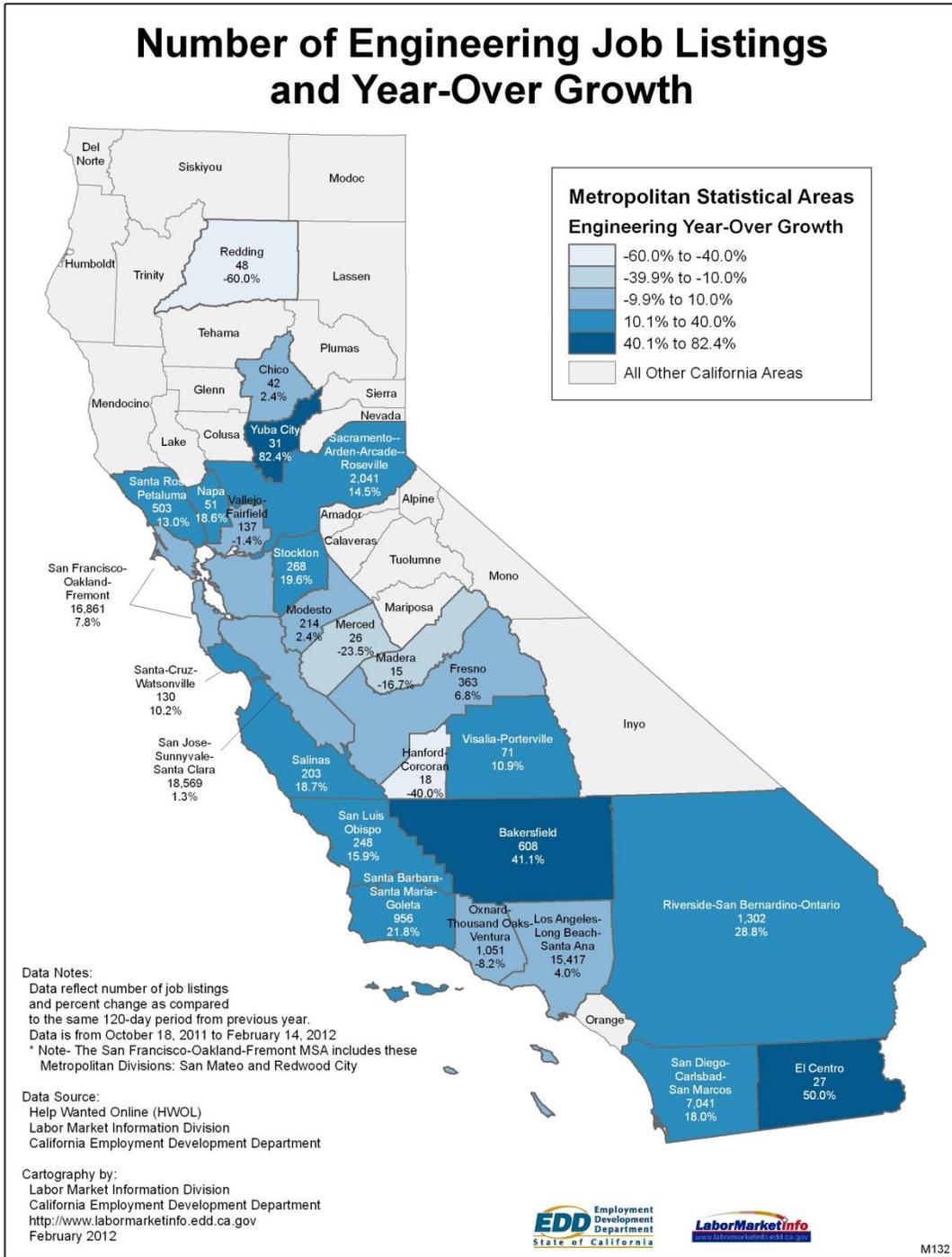
An analysis of the geographic location of job listings posted during the review period reinforced widely held beliefs about the distribution of manufacturing jobs, particularly in the production and engineering occupational groups. Production is still heavily concentrated in the southern region of the state, while engineering remains strong in the San Francisco Bay Area.

By mapping total listings and year-over change in California's 28 metropolitan statistical areas (MSA), other patterns emerge that indicate positive regional activity and job demand. One flurry of listings was noted in the Bakersfield MSA, which held the state's highest year-over growth in job listings within production, engineering, logistics, and "other" occupational categories. A review of the data showed notable growth in listings from employers in the oil refining industry such as Chevron, Baker Hughes, and Weatherford. In addition, new distribution center openings expected in the area showed an uptick in job listings for Target and Holt Caterpillar.

Engineering Listings in California

Unlike the distribution of production job listings, employers directed their search for engineering workers in what have traditionally been the most fertile grounds for computer, industrial, and technological research and development: the Silicon Valley and the remainder of the San Francisco Bay Area. The MSAs of San Jose-Sunnyvale-Santa Clara (18,569 job listings) and San Francisco-Oakland-Fremont (16,861) comprised over half of all engineering job advertisements during the review period. In year-over comparisons, the percentage of engineering job listings in the Southern California MSAs of Bakersfield (up 41.1 percent), Riverside-San Bernardino-Ontario (26.8 percent), and Santa Barbara-Santa Maria-Goleta (21.8 percent) all increased substantially; perhaps, in part, to the heightened activity of Lockheed Martin in these areas. Figure 7 displays the geographic distribution of engineering job listings in the major MSAs.

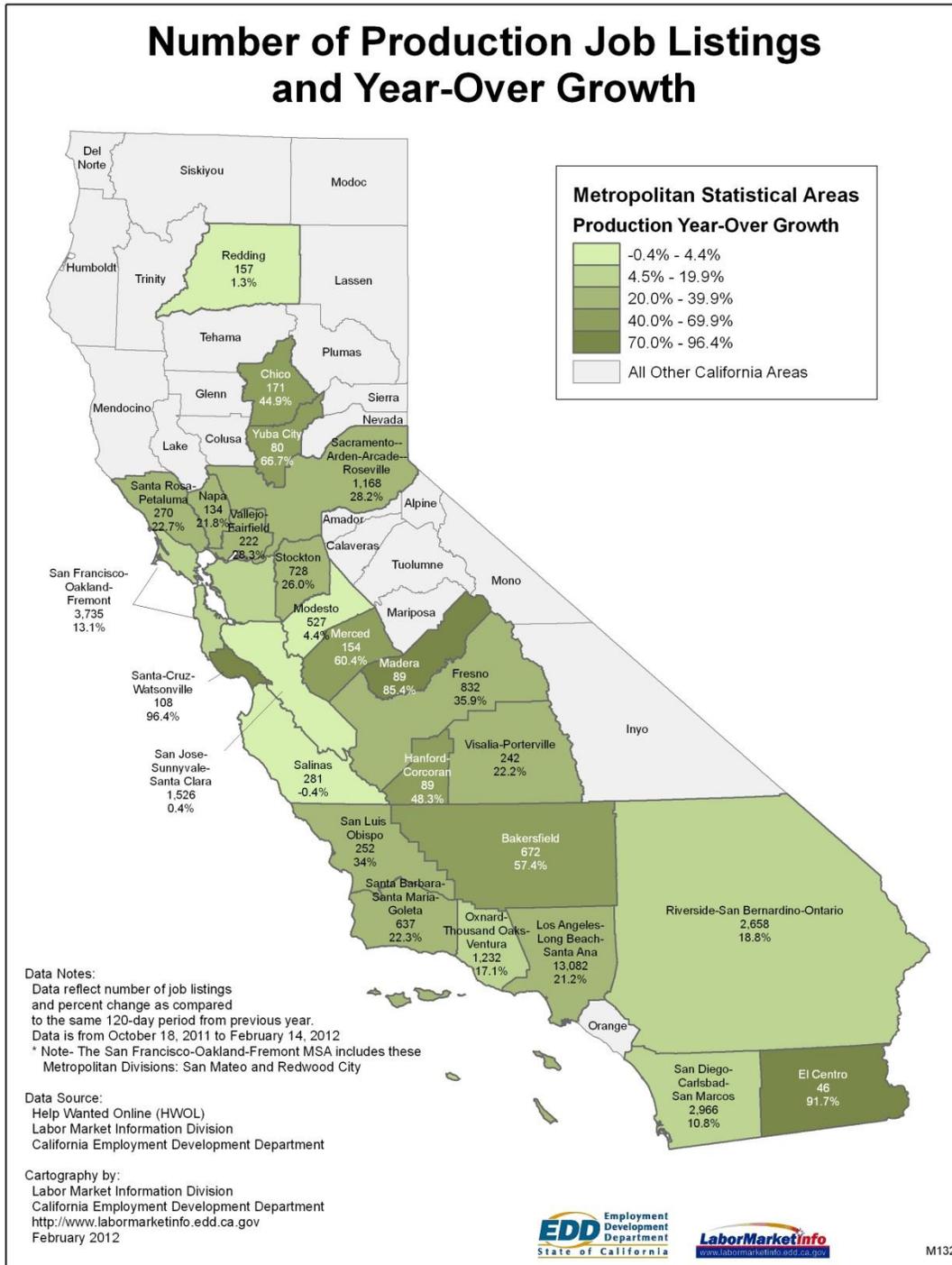
Figure 7: Map of Engineering Job Listings



Production Listings in California

In terms of the number of production job listings, the Los Angeles-Long Beach-Santa Ana MSA, not surprisingly, led the state during the researched timeframe with 13,082 job listings, followed by the San Francisco-Oakland-Fremont (3,735), the San Diego-Carlsbad-San Marcos (2,966), and the Riverside-San Bernardino-Ontario (2,658) MSAs. The Merced (up 60.4 percent), Bakersfield (57.4 percent), and Chico (44.9 percent) MSAs all experienced significant growth in year-over comparisons. Figure 8 shows the geographic layout of production job listings for California's 28 MSAs.

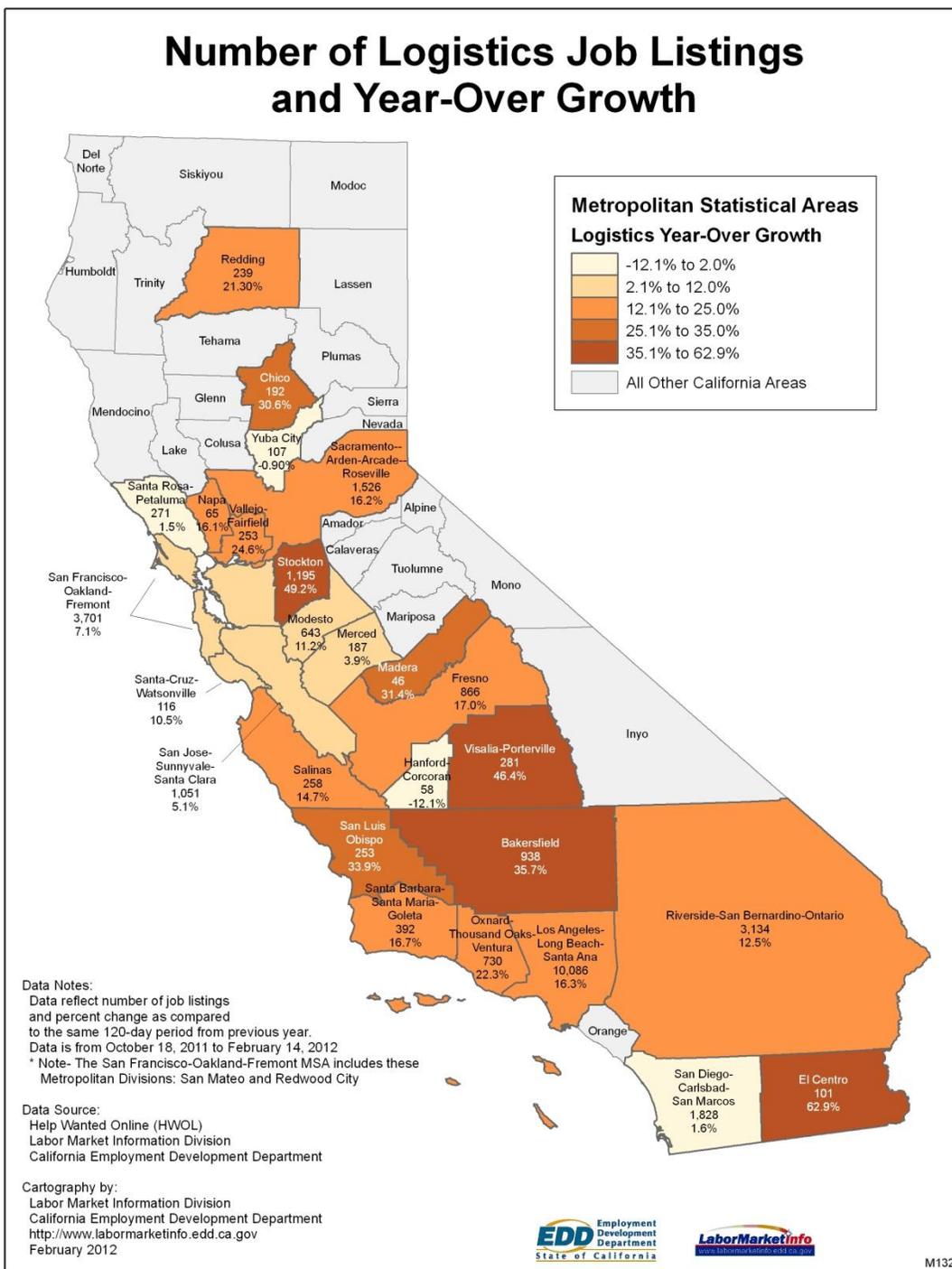
Figure 8: Map of Production Job Listings



Logistics Listings in California

The geographic pattern of job listings in the logistics sub-sector closely resembles that of the production occupational group, as the symbiotic relationship between the two would strongly suggest: relatively robust activity in the southern part of the state with pockets in the San Francisco Bay Area and the Central Valley. Furthermore, with the predominance of advertisements for long-haul semi-truck drivers within this occupational group, the regions straddling the Interstate 5, 10, and 80 corridors showed the highest number of job listings within logistics, highlighted by the Los Angeles-Long Beach-Santa Ana (10,086 job listings), San Francisco-Oakland-Fremont (3,701), and Riverside-San Bernardino-Ontario (3,134) MSAs. Strong year-over growth of job listings in the Stockton (up 49.2 percent), Visalia-Porterville (46.4 percent), and Vallejo-Fairfield (24.6 percent) MSAs also serve to underscore the logistical importance of California's main arteries and demonstrate the stable growth of its manufacturing industry. Figure 9 displays the geographical layout of logistics job listings in California's MSAs.

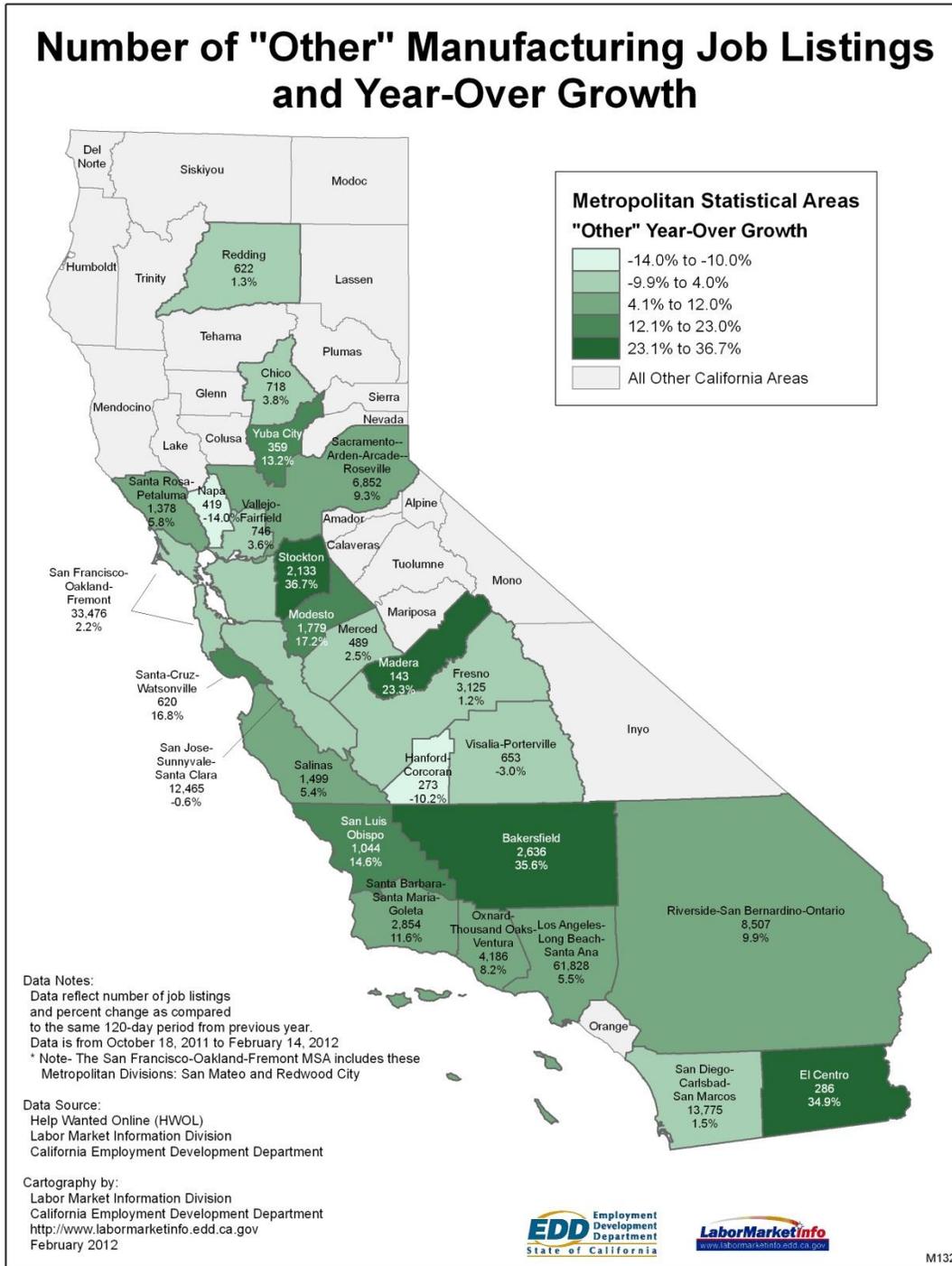
Figure 9: Map of Logistics Job Listings



Listings for “Other” Manufacturing Occupations in California

As befitting occupations common to manufacturing that are also present in many other industries, there was no discerning geographic pattern in job listings within the “other” occupational group. Not surprisingly, the highly populated Los Angeles-Long Beach-Santa Ana MSA was the home to the lion’s share of the job listings (61,828), more than the second (San Francisco-Oakland-Fremont – 33, 476), third (San Diego-Carlsbad-San Marcos – 13,775), and fourth (San Jose-Sunnyvale-Santa Clara – 12,465) MSAs combined. In terms of year-over comparison, Stockton (up 36.7 percent), Bakersfield (35.6 percent), and El Centro (34.9 percent) MSAs posted significant growth in the rate of job listings in this subsector. Figure 10 displays the geographical layout of “other” job listings in California’s MSAs.

Figure 10: Map of "Other" Manufacturing Job Listings



Demand by Workforce Services Branch Region

Job listings in the study period were also counted and summarized within the Employment Development Department's (EDD's) Workforce Services Branch's three geographic regions: Los Angeles and Ventura, Southern California, and Northern California (see Appendix I for counties within each region).

L.A.-Ventura Region

One of every three production job listings was for positions in the L.A.-Ventura region. This is consistent with the region's one-third share of the workforce population. However, the region's share of engineering advertised job listings remains low at 17 percent.

Southern Region

The Southern Region garnered 25 percent of all engineering job listings during the period.

Northern Region

The Northern Region captured 58 percent of all engineering job listings in the state, not unexpected given the predominance of software and hardware firms. Surprisingly, the San Francisco area showed the most job demand for engineers by far, with more job listings than the San Jose-Sunnyvale-Santa Clara MSA.

Logistics and "Other" job listing numbers fell fairly evenly between the three California regions during the review period.

WHICH CALIFORNIA EMPLOYERS ARE ADVERTISING?

Although we can identify some of the employers associated with jobs posted online, in many instances we do not know the identity of employers hiring. An upward trend exists in employer use of temporary and employment placement agencies to advertise and fill openings. This masks the identity of hiring employers and impedes an accurate analysis of employer demand. The North American Industry Classification System (NAICS) defines temporary help services as "establishments primarily engaged in supplying workers to clients businesses for limited periods of time to supplement the working force of the client," while employment placement services are "primarily engaged in listing employment vacancies and in referring or placing applicants for employment." The top "employers" reported for most job listings within each of production (72 percent), engineering (66 percent), and "other" manufacturing (47 percent) occupational groups were either temporary or placement firms.

Within the production occupational group, temporary and placement firms both heavily advertised for the same occupations (e.g., supervisors/managers of production workers, machinists) with two notable exceptions. First, temporary help services firms posted 166 openings for production worker helpers, up 120.3 percent over last year, while employment placement agencies advertised for welders and cutters 83 times in this period, a year-over increase of 50 percent. Geographically, the distribution of job listings follows the state population distribution, with the greater Los Angeles, San Diego, and San Francisco metropolitan areas among the top areas for these job listings.

The exception to the trend of using temporary agencies was seen in logistics, where the top five employers listing openings were private trucking firms.

Notable Employer Activity - Lockheed

In mid-November 2011, a large statewide jump in job listings (1,884) was noted for Lockheed Martin, particularly in Los Angeles and Santa Barbara counties. These listings reflect recent Lockheed contracts, with work centered on or near Air Force bases. Lockheed Martin was, in fact, the top advertising employer during the review period, outside of temporary or placement agencies, for manufacturing occupations.

TRAINING AND EXPERIENCE REQUIREMENTS

An analysis of HWOL job ads appearing in the production occupations shows that employers' qualification requirements and preferences slightly differ from the BLS-assigned training levels¹. BLS assigns training levels to Standard Occupational Classification codes based on employer survey results. Occupations within the production occupation group vary according to BLS education and training levels. While the training levels assigned by BLS accurately reflect training required to perform the occupation, they may not represent current employer demand for educational requirements within the manufacturing industry.

For some production occupations, the qualifications in employer job listings are similar to BLS training levels. However, job listings for several occupations do not appear to match their BLS-assigned training levels. According to BLS, first-line supervisors/managers of production and operating workers' average training level is "work experience," but upon further examination, most employers preferred an applicant with a bachelor of science degree and prior work experience. Similarly, the assigned training level for industrial production managers is a bachelor of science degree, but upon further analysis, most employers in the 120-day review period required 3-5 years' experience. The most revealing: of the top ten production occupations with the greatest number of job ads, production, planning, and expediting clerks showed the most discrepancy between employer demand and BLS level. The BLS-assigned training level for this occupation is short-term on-the-job training (less than 30 days in length), yet most advertising employers preferred an applicant with a bachelor of science or bachelor of arts degree plus work experience. When looking at disparities between job listings and average training requirements, it is important to add that during poor economic times, when the labor pool is large, employers can demand higher skill levels for candidates.

The information contained within job ads for education and work experience is difficult to quantify reliably. Job ads may be disproportionately concentrated in one region and the types of manufacturing vary by region. Employer size affects the types of job ads: the larger the employer, the greater number of job ads. These factors can and should be properly weighted, making the information in job ads more quantifiable, but there is also a categorization problem. The job requirements for education and work experience differ among the various employers. For example, a welder may only have experience in Tungsten Inert Gas (TIG) welding, but a company is seeking a welder with 2 years of Metal Inert Gas (MIG) welding experience. There are no standard rules for employer requirements regarding education and work experience; therefore, there is no consistency. There are so many different combinations of experience within each area of an occupation that trying to realistically categorize the types and length of experience and training levels becomes unmanageable.

Real-time job ads do, however, provide a snapshot of a changing industry. To understand the emergent hiring trends in the manufacturing industry, greater attention needs to be concentrated on how employers define employment qualifications through education and work experience.

¹ Bureau of Labor Statistics, Training Levels: http://www.bls.gov/emp/ep_education_tech.htm.

SKILLS, TOOLS, AND CERTIFICATIONS IN DEMAND

This section identifies the essential skills, tools, software, and certifications needed in manufacturing firms today. Using 49 keywords recommended by members of the California Manufacturers & Technology Association (CMTA), the HWOL tool was used to search across all job listings during the review period. Figures 11, 12, and 13 below show the top five ranked skills, tools, job titles, and certifications. For results on all 49 keywords provided by CMTA, see Appendices J-L. Note: a few keywords supplied by CMTA brought indefinite results due to the multiple meanings of the word depending on field of work. For example, “setup” is a skill required by occupations in production as well as in office and accounting occupations.

Figure 11: Skills in Demand

Skills in Demand			
Skill keyword(s)	Total Job Listings	Top Occupations	Top Employers
QA ²	21,481	<ul style="list-style-type: none"> Computer Software Engineers, Applications Industrial Engineers First-Line Supervisors/Managers of Production and Operating Workers 	<ul style="list-style-type: none"> Aerotek CyberCoders Apple VMware, Inc. Emc Corporation
Product management	12,322	<ul style="list-style-type: none"> Marketing Managers Computer Software Engineers, Applications General and Operations Managers 	<ul style="list-style-type: none"> CyberCoders VMware, Inc. eBay Google Inc. Salesforce.com
Setup	10,719	<ul style="list-style-type: none"> Computer Software Engineers, Applications Machinists Customer Service Representatives 	<ul style="list-style-type: none"> Aerotek OfficeTeam Appleone CyberCoders
Business analysis	5,681	<ul style="list-style-type: none"> Marketing Managers Computer Software Engineers, Applications General and Operations Managers 	<ul style="list-style-type: none"> Hewlett-Packard Company ANN INC. eBay Apple Amgen
Welding	4,676	<ul style="list-style-type: none"> Welders, Cutters, and Welder Fitters Maintenance and Repair Workers, General First-Line Supervisors/Managers of Production and Operating Workers 	<ul style="list-style-type: none"> Aerotek Allegis Group Airgas Space Exploration Technologies Corp

Source: The Conference Board Help Wanted Online™120-day Period ending Feb. 2, 2012; California Manufacturers & Technology Association.

² The quality assurance acronym “QA” was applied to the keyword search, as the acronym produced higher results.

Figure 12: Tools and Software in Demand

Tools and Software			
Tool	Total Job Listings	Sample Occupations	Top Employers
SQL	37,641	<ul style="list-style-type: none"> Computer Software Engineers, Applications Marketing Managers Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> CyberCoders Salesforce.com Microsoft Corporation Apple
UNIX	18,280	<ul style="list-style-type: none"> Computer Software Engineers, Applications Computer Software Engineers, Systems Software Computer Hardware Engineers Electronics Engineers, Except Computer 	<ul style="list-style-type: none"> Apple CyberCoders Cisco Systems Yahoo! Inc
CAD	6,548	<ul style="list-style-type: none"> Mechanical Engineers Industrial Engineers Electrical Engineers Electronics Engineers, Except Computer 	<ul style="list-style-type: none"> Aerotek Allegis Group Apple Nvidia Corporation
SolidWorks	2,686	<ul style="list-style-type: none"> Mechanical Engineers Industrial Engineers Mechanical Drafters Electrical Engineers 	<ul style="list-style-type: none"> Aerotek Allegis Group Randstad Engineering CyberCoders
CAM	1,591	<ul style="list-style-type: none"> Machinists Accountants Industrial Engineers Numerical Tool and Process Control Programmers 	<ul style="list-style-type: none"> DP Technology The Boeing Company Aerotek DP TECHNOLOGY CORP

Source: The Conference Board Help Wanted Online™120-day Period ending Feb. 2, 2012; California Manufacturers & Technology Association.

Figure 13: Certifications in Demand

Certifications			
Certification	Total Job Listings	Sample Occupations	Top Employers
CISSP (Certified Information Systems Security Professional)*	1,837	<ul style="list-style-type: none"> Network and Computer Systems Administrators Computer and Information Systems Managers Engineers, All Other 	<ul style="list-style-type: none"> Lockheed Martin Intuit Inc. ca technologies Kforce Professional Staffing, Inc. Allegis Group
AS9100	851	<ul style="list-style-type: none"> Industrial Engineers First-Line Supervisors/Managers of Production and Operating Workers Inspectors, Testers, Sorters, Samplers, and Weighers 	<ul style="list-style-type: none"> Aerotek Precision Castparts Corp. Lockheed Martin C&D Zodiac Circor
ISO9000	216	<ul style="list-style-type: none"> Industrial Engineers Inspectors, Testers, Sorters, Samplers, and Weighers Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> Volt Aerotek Avery Dennison Aerotek Philips

Source: The Conference Board Help Wanted Online™120-day Period ending Feb. 2, 2012; California Manufacturers & Technology Association.

* Job listings reported for all occupations.

AD AGE – WHAT JOBS ARE HARD TO FILL?

One of the capabilities of HWOL is to identify and stratify job listings by the length of time the listings are advertised. Long-running job listings can be an indicator of hard-to-fill jobs, even tempered by the knowledge that some listings are posted on a regular basis regardless of actual openings, and that other ads languish online long after the position is filled.

During the past 120-day period ending March 1, 2012, 37 percent of all job listings had been advertised over 90 days. Manufacturing occupations show similar shares, with engineering ads showing the largest percentage of long-running listings (39 percent), followed by logistics (37 percent), “other” manufacturing occupations (36 percent), and production occupations (34 percent). Single occupations with the largest share of listings advertised over 90 consecutive days were computer software engineers (systems) and heavy truck drivers.

Figure 14 shows the top-ranked occupations with job listings over 90 days old.

Figure 14: Longest-Running Ads by Occupation

Occupations with Most Long-Running Job Listings (90+ days)				
Manufacturing Group	Top Occupations	Job Listings 90+ days	Total Job Listings	Percent of Total
Production	First-Line Supervisors/Managers of Production and Operating Workers	3,107	8,794	35.0
	Production, Planning, and Expediting Clerks	919	2,583	36.0
	Inspectors, Testers, Sorters, Samplers, and Weighers	878	2,734	32.0
Engineering	Computer Software Engineers, Applications	13,836	35,724	39.0
	Industrial Engineers	5,345	14,073	38.0
	Computer Software Engineers, Systems Software	3,248	7,814	42.0
Logistics	Truck Drivers, Heavy and Tractor-Trailer	5,478	13,095	42.0
	Truck Drivers, Light or Delivery Services	1,553	4,352	36.0
	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	1,288	3,829	34.0
Other Manufacturing	Marketing Managers	9,638	24,338	40.0
	Executive Secretaries and Administrative Assistants	8,019	24,420	33.0
	Customer Service Representatives	7,324	20,206	36.0

Source: The Conference Board Help Wanted OnLine™ (HWOL) Data Series: Period ending March 1, 2012

SUMMARY AND CAVEATS ABOUT REAL-TIME DATA

It appears California's manufacturing industry is rebounding, based on year-over comparisons of advertised job listings for relevant occupations in production (up 18.8 percent), logistics (up 16.3 percent), and engineering (up 8.6 percent) firms. Overall, advertised jobs for occupations in the manufacturing sector rose 7.7 percent over the same 120-day timeframe a year ago, just short of the average 8.3 percent increase across all occupations during the same time.

Production-level job listings were low, given the overall employment in this category. The authors believe skilled labor job listings on HWOL do not reflect true demand, since these jobs generally are not advertised but are filled through union halls, word-of-mouth, or other methods.

Real-time labor market information using tools such as the Conference Board's Help Wanted Online™ provide point-in-time snapshots of job demand, as well as valuable year-over comparisons. However, comparing job listings as a time series over a number of years would be even more valuable and would smooth out irregularities, giving a more accurate picture of job demand by industry, by geographic location, and by occupational classification.

Caveats of HWOL and Real-Time Data

- Real-time data systems such as HWOL cannot classify a majority of job listings to their correct industry, due in part to lack of employer information within the ads, but also because many postings are generated through temporary agencies or recruiting firms. Therefore, while this study focuses on occupations common to manufacturing based on staffing patterns, some of the occupational ad listing totals will be inflated due to the cross-industry nature of some occupations. This is particularly true in the "other" occupational group, where occupations (e.g., accountants and auditors) appear in all industries.
- The "job description" field in each job listing is rich with emerging and in-demand skills, software, certifications, and other information. However, the non-standard nature of this information makes it very time-consuming to develop an anecdotal-level analysis and impossible to quantify on a reliable basis.
- The HWOL system does not have a year-over comparison function for keyword searches, which inhibits tracking the demand for new technologies and skills.
- Even with the use of the HWOL filter settings designed to exclude duplicate ads, the authors still came across instances where multiple ads were found for one position in a single location.
- Users of real-time data need to be aware that job listings are not the same as job openings. One listing often represents multiple open positions.

Labor Market Information for Engineering Occupations– Appendix A

Engineering Jobs in Demand (in rank order by 2010 Employment)				
Occupation Title	2010 Employment	2012 Employment	Growth (Percentage)	Median Hourly Wage
Computer Software Engineers, Applications (SOC 15-1031)	77,200	84,800	9.8	\$49.17
Computer Software Engineers, Systems Software (SOC 15-1032)	69,700	76,300	9.5	\$52.81
Engineers, All Other (SOC 17-2199)	34,300	35,700	4.1	\$49.51
Engineering Managers (SOC 11-9041)	31,400	32,900	4.8	\$67.45
Electronics Engineers, Except Computer (SOC 17-2072)	27,900	28,800	3.2	\$48.59
Mechanical Engineers (SOC 17-2141)	20,800	21,800	4.8	\$42.89
Electrical and Electronics Engineering Technicians (SOC 17-3023)	19,000	19,600	3.2	\$29.18
Industrial Engineers (SOC 17-2112)	17,900	19,300	7.8	\$42.26
Electrical Engineers (SOC 17-2071)	17,200	18,000	4.7	\$47.12
Computer Hardware Engineers (SOC 17-2061)	16,800	17,700	5.4	\$53.42
Industrial Engineering Technicians (SOC 17-3026)	4,500	4,800	6.7	\$24.21
Mechanical Drafters (SOC 17-3013)	4,500	4,600	2.2	\$26.12
Mechanical Engineering Technicians (SOC 17-3027)	3,100	3,200	3.2	\$25.72
Electrical and Electronic Drafters (SOC 17-3012)	3,000	3,100	3.3	\$26.99
Chemical Engineers (SOC 17-2041)	1,900	2,000	5.3	\$48.64

Source: California Employment Development Department, Projections of Employment 2010-2012; Occupational Employment Statistics Wage Survey, 1st Q, 2011.

Labor Market Information for Production Occupations – Appendix B

Production Jobs in Demand (in rank order by 2010 Employment)				
Occupation Title	2010 Employment	2012 Employment	Growth (Percent)	Median Hourly Wage
Packers and Packagers, Hand (SOC 53-7064)	99,900	102,300	2.4	\$9.39
First-Line Supervisors/Managers of Production and Operating Workers (SOC 51-1011)	54,000	55,600	3.0	\$26.48
Inspectors, Testers, Sorters, Samplers, and Weighers (SOC 51-9061)	47,000	49,100	4.5	\$16.12
Packaging and Filling Machine Operators and Tenders (SOC 51-9111)	45,200	47,000	4.0	\$10.84
Sewing Machine Operators (SOC 51-6031)	41,600	42,900	3.1	\$9.29
Helpers--Production (SOC 51-9198)	38,300	40,300	5.2	\$10.24
Production, Planning, and Expediting Clerks (SOC 43-5061)	37,500	39,000	4.0	\$22.94
Machinists (SOC 51-4041)	31,500	33,200	5.4	\$18.70
Assemblers and Fabricators, All Other (SOC 51-2099)	28,500	30,100	5.6	\$12.56
Welders, Cutters, and Welder Fitters (SOC 51-4121)	23,900	24,800	3.8	\$17.62
Electrical and Electronic Equipment Assemblers (SOC 51-2022)	21,700	22,800	5.1	\$14.37
Laundry and Dry-Cleaning Workers (SOC 51-6011)	21,200	21,400	0.9	\$9.83
Industrial Production Managers (SOC 11-3051)	16,900	17,400	3.	\$44.62
Printing Machine Operators (SOC 51-5023)	16,800	17,200	2.4	\$16.87
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic (SOC 51-4031)	15,300	15,700	2.6	\$13.71
Industrial Machinery Mechanics (SOC 49-9041)	15,000	15,900	6.0	\$26.16
Computer-Controlled Machine Tool Operators, Metal and Plastic (SOC 51-4011)	9,200	9,900	7.6	\$17.10
Water and Liquid Waste Treatment Plant Operators (SOC 51-8031)	8,200	8,200	0.0	\$29.17
Electromechanical Equipment Assemblers (SOC 51-2023)	7,900	8,300	5.1	\$13.86
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic (SOC 51-4072)	7,500	7,700	2.7	\$11.25
Painters, Transportation (SOC 51-9122)	5,200	5,300	1.9	\$21.73
Dental Lab Technicians (SOC 51-9081)	4,200	4,300	2.4	\$17.87
Painting, Coating, and Decorating Workers (SOC 51-9023)	1,400	1,400	0.0	\$11.99
Numerical Tool and Process Control Programmers (SOC 51-4012)	1,200	1,300	8.3	\$26.94

Source: California Employment Development Department, Projections of Employment 2010-2012; Occupational Employment Statistics Wage Survey, 1st Q, 2011

Labor Market Information for Logistics Occupations – Appendix C

Logistics Occupations in Demand (in rank order by 2010 Employment)				
Occupation Title	2010 Employment	2012 Employment	Growth (Percent)	Median Hourly Wage
Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062)	233,100	243,500	4.5	\$11.89
Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032)	129,700	139,200	7.3	\$19.71
Truck Drivers, Light or Delivery Services (SOC 53-3033)	101,400	106,300	4.8	\$14.81
Shipping, Receiving, and Traffic Clerks (SOC 43-5071)	92,100	94,900	3.0	\$14.16
Industrial Truck and Tractor Operators (SOC 53-7051)	65,100	68,000	4.5	\$15.89
First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators (SOC 53-1031)	20,300	20,700	2.0	\$27.23
Dispatchers, Except Police, Fire, and Ambulance (SOC 43-5032)	19,800	20,100	1.5	\$18.13
Cargo and Freight Agents (SOC 43-5011)	11,700	12,500	6.8	\$19.22
Transportation, Storage, and Distribution Managers (SOC 11-3071)	11,600	11,700	0.9	\$40.92
Logisticians (SOC 13-1081)	10,700	11,200	4.7	\$37.12

Source: Employment Development Department Projections of Employment 2010-2012; Occupational Employment Statistics Wage Survey, 1st Q, 2011.

Labor Market Information for “Other” Occupations – Appendix D

“Other” Manufacturing Occupations in Demand (in rank order by 2010 Employment)				
Occupation Title	2010 Employment	2012 Employment	Growth (Percent)	Median Hourly Wage
Office Clerks, General (SOC 43-9061)	339,100	349,300	3.0	\$14.45
General and Operations Managers (SOC 11-1021)	230,300	236,200	2.6	\$53.29
Janitors and Cleaners, Except Maids and Housekeeping Cleaners (SOC 37-2011)	205,200	208,800	1.8	\$11.59
Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)	202,400	209,600	3.6	\$18.82
Executive Secretaries and Administrative Assistants (SOC 43-6011)	202,300	210,300	4.0	\$23.11
Customer Service Representatives (SOC 43-4051)	184,400	196,400	6.5	\$17.32
First-Line Supervisors/Managers of Office and Administrative Support Workers (SOC 43-1011)	173,100	179,600	3.8	\$26.15
Business Operations Specialists, All Other (SOC 13-1199)	161,700	165,600	2.4	\$31.71
Accountants and Auditors (SOC 13-2011)	129,400	136,600	5.6	\$33.03
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012)	128,500	136,500	6.2	\$27.25
Maintenance and Repair Workers, General (SOC 49-9042)	119,100	122,800	3.1	\$18.46
Financial Managers (SOC 11-3031)	67,100	69,800	4.0	\$56.45
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (SOC 41-4011)	48,000	51,300	6.9	\$37.87
Marketing Managers (SOC 11-2021)	33,400	35,400	6.0	\$63.88
Purchasing Agents, Except Wholesale, Retail, and Farm Products (SOC 13-1023)	30,800	32,400	5.2	\$29.49

Source: Employment Development Department Projections of Employment 2010-2012; Occupational Employment Statistics Wage Survey, 1st Q, 2011.

Top Engineering Occupations – Appendix E

Engineering Listings				
CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	HWOL Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Computer Software Engineers, Applications (SOC 15-1031)	27,849	8.1	6.5	16.4
Industrial Engineers (SOC 17-2112)	10,760	19.0	4.4	20.5
Computer Software Engineers, Systems Software (SOC 15-1032)	6,055	5.0	4.1	16.0
Mechanical Engineers (SOC 17-2141)	4,365	10.8	4.4	21.0
Electrical Engineers (SOC 17-2071)	3,708	2.5	5.0	20.4
Engineering Managers (SOC 11-9041)	3,367	12.5	2.7	23.0
Electronics Engineers, Except Computer (SOC 17-2072)	3,240	-7.7	7.0	12.8
Computer Hardware Engineers (SOC 17-2061)	2,643	10.7	3.8	14.3
Electrical and Electronics Engineering Technicians (SOC 17-3023)	2,162	25.2	9.4	19.2
Industrial Engineering Technicians (SOC 17-3026)	1,045	2.3	6.0	23.2
Engineers, All Other (SOC 17-2199)	663	-19.9	5.6	18.3
Chemical Engineers (SOC 17-2041)	509	22.1	6.7	27.1
Mechanical Drafters (SOC 17-3013)	477	-27.2	8.2	24.1
Mechanical Engineering Technicians (SOC 17-3027)	250	52.4	6.0	19.2
Electrical and Electronic Drafters (SOC 17-3012)	155	47.2	10.3	31.6

Source: The Conference Board Help Wanted Online™ Data Series; *as compared to the same 120-day period from the previous year.

Top Production Occupations – Appendix F

Production Listings				
CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	Total Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
First-Line Supervisors/Managers of Production and Operating Workers (SOC 51-1011)	7,033	19.3	7.6	12.2
Machinists (SOC 51-4041)	2,195	27.8	3.7	12.3
Inspectors, Testers, Sorters, Samplers, and Weighers (SOC 51-9061)	2,099	20.6	4.4	20.1
Production, Planning, and Expediting Clerks (SOC 43-5061)	2,056	10.7	8.5	18.7
Helpers--Production Workers (SOC 51-9198)	1,425	37.5	9.1	11.2
Industrial Production Managers (SOC 11-3051)	1,359	-4.1	1.2	7.9
Welders, Cutters, and Welder Fitters (SOC 51-4121)	1,324	7.6	4.0	10.1
Industrial Machinery Mechanics (SOC 49-9041)	1,220	36.6	4.8	8.9
Computer-Controlled Machine Tool Operators, Metal and Plastic (SOC 51-4011)	920	27.6	4.2	9.8
Electrical and Electronic Equipment Assemblers (SOC 51-2022)	891	4.6	7.2	16.0
Printing Machine Operators (SOC 51-5023)	616	26.7	19.5	5.4
Tailors, Dressmakers, and Custom Sewers (SOC 51-2099)	514	39.7	14.8	2.7
Assemblers and Fabricators, All Other (SOC 51-2099)	509	16.2	7.5	11.6
Numerical Tool and Process Control Programmers (SOC 51-4012)	408	60.6	4.7	21.1
Electromechanical Equipment Assemblers (SOC 51-2023)	395	-15.2	4.6	20.5
Packers and Packagers, Hand (SOC 53-7064)	385	19.6	14.0	9.9
Sewing Machine Operators (SOC 51-6031)	362	20.3	13.0	4.7
Packaging and Filling Machine Operators and Tenders (SOC 51-9111)	345	5.5	8.1	12.8
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic (SOC 51-4031)	322	23.4	2.5	10.6
Water and Liquid Waste Treatment Plant and System Operators (SOC 51-8031)	259	32.8	10.8	20.1
Painting, Coating, and Decorating Workers (SOC 51-9123)	249	-38.2	15.3	6.4
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic (SOC 51-4072)	232	17.2	0.9	6.0
Laundry and Dry-Cleaning Workers (SOC 51-6011)	217	15.4	15.7	4.1
Dental Laboratory Technicians (SOC 51-9081)	211	41.6	12.3	5.2
Painters, Transportation Equipment (SOC 51-9022)	189	23.5	4.2	6.3

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

Top Logistics Occupations– Appendix G

Logistics Listings				
CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	HWOL Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032)	10,835	37.5	13.2	15.8
Truck Drivers, Light or Delivery Services (SOC 53-3033)	3,861	13.4	31.7	7.0
First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators (SOC 53-1031)	3,134	17.2	13.7	12.5
Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062)	2,874	-6.3	17.0	7.9
Shipping, Receiving, and Traffic Clerks (SOC 43-5071)	1,543	0.7	12.2	10.1
Transportation, Storage, and Distribution Managers (SOC 11-3071)	1,421	2.8	6.6	10.4
Industrial Truck and Tractor Operators (SOC 53-7051)	1,175	-16.4	4.9	13.6
Logisticians (SOC 13-1081)	907	28.5	7.1	22.9
Dispatchers, Except Police, Fire, and Ambulance (SOC 43-5032)	803	10.6	13.7	7.8
Cargo and Freight Agents (SOC 43-5011)	466	4.7	11.6	9.0

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

Top “Other” Manufacturing Occupations– Appendix H

“Other” Job Listings				
CA Listings posted online Oct. 6, 2011 to Feb. 2, 2012				
Occupation Title	Total Job Listings	Percent Change*	Part-Time (Percent)	Contract (Percent)
Executive Secretaries and Administrative Assistants (SOC 43-6011)	21,677	5.4	20.0	11.2
Marketing Managers (SOC 11-2021)	19,515	-0.2	4.7	11.3
Customer Service Representatives (SOC 43-4051)	17,251	1.7	19.9	12.2
Accountants and Auditors (SOC 13-2011)	16,700	9.7	6.4	14.5
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012)	12,599	0.9	10.1	8.4
First-Line Supervisors/Managers of Office and Administrative Support Workers (SOC 43-1011)	10,650	10.4	13.6	11.2
Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)	10,098	5.5	18.7	17.4
Financial Managers (SOC 11-3031)	9,519	-1.6	6.5	10.1
Office Clerks, General (SOC 43-9061)	8,854	4.0	28.8	11.3
General and Operations Managers (SOC 11-1021)	8,364	8.7	6.0	12.4
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (SOC 41-4011)	8,005	2.0	7.5	10.0
Maintenance and Repair Workers, General (SOC 49-9042)	5,679	11.1	19.6	6.8
Janitors and Cleaners, Except Maids and Housekeeping Cleaners (SOC 37-2011)	3,652	14.5	27.8	6.1
Purchasing Agents, Except Wholesale, Retail, and Farm Products (SOC 13-1023)	2,514	7.0	4.0	35.2
Business Operations Specialists, All Other (SOC 13-1199)	2,017	5.0	7.7	43.1

Source: The Conference Board Help Wanted Online™; *as compared to the same 120-day period from the previous year.

California Workforce Services Branch Regions – Appendix I

The Employment Development Department’s (EDD’s) Workforce Services Branch’s three geographic regions are comprised of counties grouped into three areas: Los Angeles and Ventura, Southern California, and Northern California.

WORKFORCE SERVICES BRANCH REGIONS

NORTHERN REGION
Alameda County
Alpine County
Amador County
Butte County
Calaveras County
Colusa County
Contra Costa County
Del Norte County
El Dorado County
Glenn County
Humboldt County
Lake County
Lassen County
Marin County
Mendocino County
Merced County
Modoc County
Monterey County
Napa County
Nevada County
Placer County
Plumas County
Sacramento County
San Benito County
San Francisco County
San Joaquin County
Santa Clara County
Santa Cruz County
Shasta County
Sierra County
Siskiyou County
Solano County
Sonoma County
Stanislaus County
Tehama County
Trinity County
Tuolumne County
Yolo County
Yuba County

L.A.-VENTURA REGION
Los Angeles County
Ventura County

SOUTHERN REGION
Fresno County
Imperial County
Inyo County
Kern County
Kings County
Madera County
Mono County
Orange County
Riverside County
San Bernardino County
San Diego County
San Luis Obispo County
Santa Barbara County
Tulare County

Skills and Knowledge in Demand – Appendix J

Skills Keywords (Alpha Order)				
Skill	Total Job Listings		Top Occupations	Top Employer Listings
	All Industries	Manufacturing Occupations		
Application support	2,403	378	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Computer Software Engineers, Systems Software • Industrial Engineers • Electrical Engineers 	<ul style="list-style-type: none"> • Lockheed Martin • AT&T • Teledyne • RD Instruments • Modis
Business analysis	5,681	962	<ul style="list-style-type: none"> • Marketing Managers • Computer Software Engineers, Applications • General and Operations Managers • Accountants 	<ul style="list-style-type: none"> • Hewlett-Packard Company • ANN INC. • eBay • Apple • Amgen
Complex Solutions	903	221	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products • Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products • Marketing Managers 	<ul style="list-style-type: none"> • AT&T • Hewlett-Packard Company • Oracle America • Cisco Systems • Cisco • Belkin Corporation
Compounding	630	95	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Production and Operating Workers • Industrial Engineers • Production, Planning, and Expediting Clerks • Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products 	<ul style="list-style-type: none"> • Appleone • Teva Pharmaceuticals • Johnson & Johnson • Select Staffing
Database administration	2,264	219	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Executive Secretaries and Administrative Assistants • Accountants • Electronics Engineers, Except Computer 	<ul style="list-style-type: none"> • CyberCoders • TEKsystems • Microsoft Corporation • Oracle America • Bank Of America
Extrusion	328	308	<ul style="list-style-type: none"> • Industrial Engineers • Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic • First-Line Supervisors/Managers of Production and Operating Workers • Mechanical Engineers 	<ul style="list-style-type: none"> • Apple • Medtronic • Aerotek • CareFusion • Alcon Laboratories, Inc.

Skills Keywords (Alpha Order)				
Skill	Total Job Listings		Top Occupations	Top Employer Listings
	All Industries	Manufacturing Occupations		
Fiber placement	88	22	<ul style="list-style-type: none"> Materials Engineers** Industrial Engineers Computer Software Engineers, Applications Engineering Managers Aerospace Engineers 	<ul style="list-style-type: none"> Lockheed Martin HITCO Carbon Composites General Employment RONIN GOODRICH
Injection molding	925	859	<ul style="list-style-type: none"> Industrial Engineers Mechanical Engineers Production and Operating Worker Supervisors Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic 	<ul style="list-style-type: none"> Aerotek Apple CyberCoders Dynacast Allegis Group
Marcom	551	377	<ul style="list-style-type: none"> Marketing Managers General and Operations Managers Computer Software Engineers, Applications Executive Secretaries and Administrative Assistants 	<ul style="list-style-type: none"> Apple Hewlett-Packard Company Thermo Fisher Scientific Cisco VPOfMarketing.com
Mold making	57	46	<ul style="list-style-type: none"> Machinists Industrial Engineers Tool and Die Makers First-Line Supervisors/Managers of Production and Operating Workers 	<ul style="list-style-type: none"> Apple Appleone Marman Industries Inc. Nation Hire Collins Professional Placement
Plastic injection	296	275	<ul style="list-style-type: none"> Mechanical Engineers Industrial Engineers First-Line Supervisors/Managers of Production and Operating Workers Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic 	<ul style="list-style-type: none"> Aerotek Allegis Group Aerotek CE Apple Volt
Product management	12,322	7,462	<ul style="list-style-type: none"> Marketing Managers Computer Software Engineers, Applications General and Operations Managers Engineering Managers 	<ul style="list-style-type: none"> CyberCoders VMware, Inc. eBay Google Inc. Salesforce.com
QA	21,481	8,115	<ul style="list-style-type: none"> Computer Software Engineers, Applications Industrial Engineers First-Line Supervisors/Managers of Production and Operating Workers Marketing Managers 	<ul style="list-style-type: none"> Aerotek CyberCoders Apple VMware, Inc. Emc Corporation
Requirements documentation	854	215	<ul style="list-style-type: none"> Computer Software Engineers, Applications Marketing Managers Industrial Engineers Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> Hostess Brands CyberCoders Belkin Corporation Advanced BioHealing Inc. Aerotek

Skills Keywords (Alpha Order)				
Skill	Total Job Listings		Top Occupations	Top Employer Listings
	All Industries	Manufacturing Occupations		
Scientific molding	4	4	<ul style="list-style-type: none"> Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic Industrial Machinery Mechanics 	<ul style="list-style-type: none"> Volt Scholle Packaging
Setup	10,719	3,819	<ul style="list-style-type: none"> Computer Software Engineers, Applications Machinists Customer Service Representatives Computer-Controlled Machine Tool Operators, Metal and Plastic 	<ul style="list-style-type: none"> Aerotek OfficeTeam Appleone CyberCoders
Ship Repair	263	90	<ul style="list-style-type: none"> Executive Secretaries and Administrative Assistants Purchasing Agents, Except Wholesale, Retail, and Farm Products General and Operations Managers Welders, Cutters, and Welder Fitters Inspectors, Testers, Sorters, Samplers, and Weighers 	<ul style="list-style-type: none"> BAe Systems NSC TECHNOLOGIES, INC. Epsilon Systems Solutions, Inc. Aerotek Pacific Ship Repair & Fabrication
Shipbuilding	141	89	<ul style="list-style-type: none"> Marketing Managers Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products First-Line Supervisors/Managers of Production and Operating Workers Industrial Engineers 	<ul style="list-style-type: none"> Northrop Grumman Deloitte THE TORQUE GUN COMPANY Huntington Ingalls Industries MR - SC Buffalo
SPM	160	68	<ul style="list-style-type: none"> Marketing Managers Financial Managers, Branch or Department Computer Software Engineers, Applications Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> Sierra Pacific Mortgage Company, Inc. Lockheed Martin PubMatic Genentech, Inc. Aerotek
Test and Trial	1	1	N/A	N/A
Thermoforming	66	58	<ul style="list-style-type: none"> Industrial Engineers Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic First-Line Supervisors/ Managers of Production and Operating Workers Packaging and Filling Machine Operators and Tenders 	<ul style="list-style-type: none"> Personnel Plus ASG Staffmark Manufacturing Pros BAe Systems
Welding	4,676	3,289	<ul style="list-style-type: none"> Welders, Cutters, and Welder Fitters Maintenance and Repair Workers, General First-Line Supervisors/Managers of Production and Operating Workers Industrial Machinery Mechanics 	<ul style="list-style-type: none"> Aerotek Allegis Group Airgas Space Exploration Technologies Corp

Source: The Conference Board Help Wanted Online™ Data Series; 120-day period ending Feb 2, 2012;* Keywords supplied by California Manufacturers & Technology Association.

Tools and Technology in Demand – Appendix K

Tools and Technologies in Demand*				
Tool or Software	Total Job Listings		Top Occupations	Top Advertising Employers
	All Industries	Manufacturing Occupations		
Atrium ¹	313	64	<ul style="list-style-type: none"> • Executive Secretaries and Administrative Assistants • Computer Software Engineers, Applications • Maintenance and Repair Workers • Supervisors/Managers of Office and Administrative Support Workers • Accountants 	<ul style="list-style-type: none"> • Apple • Dew Software • Experis, formerly Manpower Professional • Cognate
CAD	6,548	4,428	<ul style="list-style-type: none"> • Mechanical Engineers • Industrial Engineers • Electrical Engineers • Electronics Engineers • Mechanical Drafters 	<ul style="list-style-type: none"> • Aerotek • Allegis Group • Apple • Nvidia Corporation • Qualcomm
CAM	1,591	1,035	<ul style="list-style-type: none"> • Machinists • Accountants • Industrial Engineers • Numerical Tool and Process Control Programmers • Marketing Managers 	<ul style="list-style-type: none"> • DP Technology • The Boeing Company • Aerotek • DP TECHNOLOGY CORP • Apple
InDesign	3,400	584	<ul style="list-style-type: none"> • Marketing Managers • Executive Secretaries and Administrative Assistants • Applications Software Engineers • First-Line Supervisors/Managers of Production and Operating Workers • Office and Administrative Support Supervisors 	<ul style="list-style-type: none"> • Creative Circle • Schawk, Inc. • Quiksilver • Amylin Pharmaceuticals, Inc. • Extron Electronics
ITIL (IT Service Management)	2,771	274	<ul style="list-style-type: none"> • Applications Software Engineers • Auditors • Industrial Engineers • Marketing Managers • First-Line Supervisors/Managers of Office and Administrative Support Workers 	<ul style="list-style-type: none"> • Hewlett-Packard Company • ca technologies • IBM • Cisco Systems • Kforce Professional Staffing, Inc. • VMware, Inc.
MasterCAM	558	549	<ul style="list-style-type: none"> • Machinists • Numerical Tool and Process Control Programmers • First-Line Supervisors/Managers of Production and Operating Workers • Industrial Engineers 	<ul style="list-style-type: none"> • Aerotek • Allegis Group • Volt • Space Exploration Technologies Corporation • LSI Manufacturing Solutions

Tools and Technologies in Demand*				
Tool or Software	Total Job Listings		Top Occupations	Top Advertising Employers
	All Industries	Manufacturing Occupations		
Remedy (BMC)	1,758	358	<ul style="list-style-type: none"> Computer Software Engineers, Applications First-Line Supervisors/Managers of Office and Administrative Support Workers Marketing Managers Electronics Engineering Technicians 	<ul style="list-style-type: none"> AT&T Interactive CyberCoders EMC Corporation Appleone BMC Software
SolidWorks	2,686	2,406	<ul style="list-style-type: none"> Mechanical Engineers Industrial Engineers Mechanical Drafters Electrical Engineers Machinists 	<ul style="list-style-type: none"> Aerotek Allegis Group Randstad Engineering CyberCoders PEAK Technical Staffing USA
SQL	37,641	8,641	<ul style="list-style-type: none"> Computer Software Engineers, Applications Marketing Managers Computer Software Engineers, Systems Software Industrial Engineers 	<ul style="list-style-type: none"> CyberCoders Salesforce.com Microsoft Corporation Apple Kforce Professional Staffing, Inc.
SurfCAM	95	95	<ul style="list-style-type: none"> Machinists Numerical Tool and Process Control Programmers Mechanical Engineers First-Line Supervisors/Managers of Production and Operating Workers Industrial Engineers 	<ul style="list-style-type: none"> Aerotek LSI Manufacturing Solutions Allegis Group Volt PEAK Technical Staffing USA
Tool Path	18	18	<ul style="list-style-type: none"> Machinists Numerical Tool and Process Control Programmers Industrial Engineers Computer Software Engineers, Applications Mechanical Drafters 	<ul style="list-style-type: none"> Apple Namasco Corporation Collins Professional Placement SUPERBTECH, INC. Volt
Unigraphics	350	271	<ul style="list-style-type: none"> Mechanical Engineers Industrial Engineers Mechanical Drafters Computer Software Engineers, Applications Numerical Tool and Process Control Programmers 	<ul style="list-style-type: none"> PEAK Technical Staffing USA The Boeing Company Apple Aerotek Allegis Group
UNIX	18,280	5,614	<ul style="list-style-type: none"> Computer Software Engineers, Applications Computer Software Engineers, Systems Software Computer Hardware Engineers Electronics EngineersAuditors 	<ul style="list-style-type: none"> Apple CyberCoders Cisco Systems Yahoo! Inc Qualcomm

Source: The Conference Board Help Wanted OnLine™ Data Series for 120-day period ending February 2, 2012; Keywords Submitted by California Manufacturers Technological Association; *Certifications may also exist for many of these tools and software; ¹ This keyword represents more than one software product or program.

Job Titles in Demand – Appendix L

Job Titles in Demand				
Job Title Keywords	Total Job Listings		Matching Standard Occupations	Top Advertising Employers
	All Occupations	Manufacturing Occupations		
Automation Engineer	849	521	<ul style="list-style-type: none"> • Applications Software Engineers • Industrial Engineers • Electrical and Electronics Engineers • Mechatronics Engineers 	<ul style="list-style-type: none"> • TEKsystems • Apple • Allegis Group • Cisco Systems
Buyer	4,343	2,378	<ul style="list-style-type: none"> • Purchasing Agents • Marketing Managers • First-Line Supervisors/Managers of Production and Operating Workers 	<ul style="list-style-type: none"> • Select Staffing • Appleone • eBay • Aerotek • Lockheed Martin
Client Services Liaison	3	2	<ul style="list-style-type: none"> • General and Operations Managers • Customer Service Representatives 	<ul style="list-style-type: none"> • Cymetrix • Express Personnel
Information Security	246	154	<ul style="list-style-type: none"> • Computer security specialists • Electronics Engineering Technicians • Computer and Info Systems Managers 	<ul style="list-style-type: none"> • Qualcomm • Sony Electronics • Hewlett-Packard • Northrop Grumman
Pipefitter	65	7	<ul style="list-style-type: none"> • Pipe Fitters and Steamfitters • First-Line Supervisors, Construction Trades and Extraction Workers • Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters • Welders, Cutters, and Welder Fitters 	<ul style="list-style-type: none"> • Appleone • Aerotek • Allegis Group • Transfield Services
Planner/scheduler	7,641	2,168	<ul style="list-style-type: none"> • Production, Planning, and Expediting Clerks • Purchasing Agents, Except Wholesale, Retail, and Farm Products • Marketing Managers 	<ul style="list-style-type: none"> • Aerotek • Allegis Group • CyberCoders • Appleone • Adecco
Printing and Viewing Solutions Developer	2	2	<ul style="list-style-type: none"> • Computer and Information Systems Managers • Computer Programmers 	<ul style="list-style-type: none"> • DST Output
Production Manager	1,573	1,178	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Production and Operating Workers • Industrial Production Managers • General and Operations Managers • Industrial Engineers 	<ul style="list-style-type: none"> • Select Staffing • Appleone • CyberCoders • Aerotek
Production Technician	176	129	<ul style="list-style-type: none"> • Industrial Engineering Technicians • First-Line Supervisors/Managers of Production and Operating Workers • Electronics Engineering Technicians • Maintenance and Repair Workers 	<ul style="list-style-type: none"> • Integra LifeSciences • JDS Uniphase Corp • Pacific Tech Search • PerkinElmer
Technical Writer	1,259	139	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Industrial Engineers • Engineering Managers 	<ul style="list-style-type: none"> • Life Technologies • Lockheed Martin • Boston Scientific

Source: The Conference Board Help Wanted OnLine™ Data Series for 120-day period ending Feb 2, 2012; Keywords supplied by California Manufacturers Technological Association.

Certifications in Demand – Appendix M

Certifications in Demand				
Certification	# Job Listings		Top Occupations	Top Employers
	All Industries	Manufacturing		
CISSP (Certified Information Systems Security Professional)	1,837	258	<ul style="list-style-type: none"> • Computer Security Specialists • Network and Computer Systems Administrators • Computer and Information Systems Managers • Computer Systems Engineers/Architects • Auditors 	<ul style="list-style-type: none"> • Lockheed Martin • Intuit Inc. • ca technologies • Kforce Professional Staffing, Inc. • Allegis Group
AS9100	851	779	<ul style="list-style-type: none"> • Industrial Engineers • First-Line Supervisors/Managers of Production and Operating Workers • Inspectors, Testers, Sorters, Samplers, and Weighers • Machinists • Purchasing Agents, Except Wholesale, Retail, and Farm Products 	<ul style="list-style-type: none"> • Aerotek • Precision Castparts Corp. • Lockheed Martin • C&D Zodiac • Circor
ISO9000	216	157	<ul style="list-style-type: none"> • Industrial Engineers • Inspectors, Testers, Sorters, Samplers, and Weighers • Computer Software Engineers, Systems Software • First-Line Supervisors/Managers of Production and Operating Workers • Industrial Engineering Technicians 	<ul style="list-style-type: none"> • Volt • Aerotek • Avery Dennison • Aerotek • Philips • HYSpan PRECISION PRODUCTS

Source: The Conference Board Help Wanted OnLine™ Data Series for 120-day period ending Feb. 2, 2012; Keywords Submitted by California Manufacturers Technological Association.