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Drone/Unmanned Aircraft Systems Technology Occupations

Labor Market Information Report

Prepared by the San Francisco Bay Center of Excellence
for Labor Market Research
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Recommendation

The Drone/Unmanned Aircraft Systems (UAS) Technology is a new program area being considered by Gavilan College. Because there are no SOC codes that align to the emerging occupations related to Drone/UAS, data was gathered from the Burning Glass online postings over the last 12 months, with a keyword search on "drone" in the job title and also in the body of the job postings. This data provides some valuable information on demand as well as job titles, skills and employers. Many of the postings appear to be for jobs that usually require a 4-yr degree, such as systems architect or engineer. The top skills requested in online postings are Python, Software Engineering and Software Development.

However, without SOC codes, any attempt to determine a traditional labor market gap for these emerging occupations using annual openings and annual awards for Aeronautical and Aviation Technology (TOP 0950.00) would not add any value to understanding if there is sufficient demand to warrant a program in this emerging area.

This report also provides student outcomes data on employment and earnings for regional and sub-regional Aeronautical and Aviation Technology programs compared to other community colleges in the state with potentially similar programs in Aeronautical and Aviation Technology. It is recommended that this data be reviewed to better understand how outcomes for Gavilan students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region as well as to outcomes across all programs at Gavilan and in the region.

Introduction

This report profiles the Drone/UAS Technology occupations in the 12 county Bay Region and SC-Monterey (Monterey, San Benito and Santa Cruz counties) to help inform the decision regarding a new Drone/UAS Technology program at Gavilan College.

Job Postings in Bay Region and Silicon Valley Sub-Region

Table 1a. Number of Job Postings in Bay region with "drone" in the Job Title by Occupation for latest 12 months (February 2017–January 2018)

Occupation	Bay	Occupation	Bay
Sales Managers (11-2022)	7	Sales Reps, Wholesale & Manufacturing except Tech	3

Occupation		Occupation	
		& Scientific Products (41-4012)	
Computer User Support Specialist (15-1151)	6	Camera Operators, TV, Video & Motion Picture (27-4031)	2
Designers, All Other (27-1029)	4	Commercial Pilots (53-2012)	2
Business Intelligence Analysts (15-1199.08)	3	First-Line Supervisors of Mechanics, Installers & Repairers (49-1011)	2
Computer Systems Engineers/Architects (15-1199.02)	3	First-Line Supervisors of Office & Admin Support Workers (43-1011)	2
Marketing Managers (11-2021)	3	Managers, All Other (11-9199)	2
Recreation Workers (39-9032)	3	**TOTAL**	**59**

Source: Burning Glass

Table 1b. Number of Job Postings in Bay region with "drone" in the Body of the Posting by Occupation for latest 12 months (February 2017–January 2018)

Occupation	Bay	Occupation	Bay
Software Developers, Applications (15-1132)	96	Managers, All Other (11-9199)	9
Sales Reps, Wholesale & Manufacturing except Tech & Scientific Products (41-4012)	26	Software Quality Assurance Engineers & Testers (15-1199.01)	9
Marketing Managers (11-2021)	19	Computer Hardware Engineers (17-2061)	8
Sales Managers (11-2022)	17	Human Resources Specialists (13-1071)	6
Web Developers (15-1134)	17	Information Technology Project Managers (15-1199.09)	6
Computer Systems Engineers/Architect (15-1199.02)	16	Purchasing Agents except Wholesale, Retail & Farm Products (13-1023)	6
Computer User Support Specialists (15-1151)	9	**TOTAL**	**378**

Source: Burning Glass

Table 2a. Number of Job Postings in Silicon Valley with "drone" in the Job Title by Occupation for latest 12 months (Feb 2017–Jan 2018)

Occupation	Silicon Valley	Occupation	Silicon Valley
Sales Managers (11-2022)	7	Marketing Managers (11-2021)	3
Computer User Support Specialist (15-1151)	6	First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	2
Designers, All Other (27-1029)	4	First-Line Supervisors of Office & Admin Support Workers (43-1011)	2
Business Intelligence Analysts (15-1199.08)	3	Managers, All Other (11-9199)	2
Computer Systems Engineers/Architects (15-1199.02)	3	**TOTAL**	**43**

Source: Burning Glass

Table 2b. Number of Job Postings in Silicon Valley with "drone" in the Body of the Posting by Occupation for latest 12 months (Feb 2017–Jan 2018)

Occupation	Silicon Valley	Occupation	Silicon Valley

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Software Developers, Applications (15-1132)	13	Computer User Support Specialists (15-1151)	6
Sales Managers (11-2022)	11	Information Technology Project Managers (15-1199.09)	6
Computer Systems Engineers/Architects (15-1199.02)	10	Business Intelligence Analysts (15-1199.08)	5
Marketing Managers (11-2021)	8	Managers, All Other (11-9199)	5
Computer Hardware Engineers (17-2061)	6	**TOTAL**	**118**

Source: Burning Glass

Table 3a. Top Job Titles with "drone" in the Job Title for latest 12 months (February 2017 – January 2018)

Common Title	Bay	Silicon Valley	Common Title	Bay	Silicon Valley
Technical Support Engineer	6	6	Drone Light Show Business Development Manager	2	2
Drone Summer Camp Instructor	3	0	Drone Light Show Business Development Manager - Intel	2	2
Sales Representative	3	0	Drone Light Show Product Manager - Intel	2	2
Systems Architect	3	3	Drone Pilot	2	2
Aerial Cinematographer/Drone Operator	2	0	Junior Drone Application Developer Intern	2	2
Drone Application Developer Intern	2	2	Junior Drone Light Show Business Development Manager	2	2
Drone Application Developer Intern - Intel	2	2	Junior Drone Light Show Designer	2	2

Source: Burning Glass

Table 3b. Top Job Titles with "drone" in the Body of the Posting for latest 12 months (February 2017 – January 2018)

Common Title	Bay	Silicon Valley	Common Title	Bay	Silicon Valley
Software Development Engineer	34	10	Marketing Manager	5	3
Sales Representative	18	3	Vice President of Marketing	5	0
Senior Ios Engineer	16	0	Associate Buyer	4	0
IOS Developer	14	0	Engineering Manager	4	0
Web Engineer	12	0	Lead Test Engineer	4	0
Android Developer	8	2	Production Assistant	4	2
Sales Manager	7	7	Recruiter	4	0
Devops Engineer	6	1	Regional Sales Director	4	0
Technical Support Engineer	6	6	Sales Engineer	4	2
Ios Engineer	5	0	Systems Architect	4	4

Source: Burning Glass

Industry Concentration

Table 4. Industries Hiring Drone/UAS Technology Occupations in Bay Region

Industry – 3 Digit NAICS (North American	Jobs in	Jobs in	% Change	% in

Industry Classification) Codes	Industry (2016)	Industry (2021)	(2016-21)	Industry (2016)
Professional, Scientific, and Technical Services (541)	5,633	6,408	14%	38.7%
Federal Government (901)	1,527	1,520	(0%)	10.5%
Other Information Services (519)	886	1,081	22%	6.2%
Publishing Industries (except Internet) (511)	790	922	17%	5.5%
Computer & Electronic Product Manufacturing (334)	500	502	0%	3.4%
Management of Companies and Enterprises (551)	485	502	4%	3.3%
Administrative and Support Services (561)	475	515	8%	3.3%
Data Processing, Hosting, and Related Services (518)	418	553	32%	3.0%
Motion Picture and Sound Recording Industries (512)	391	434	11%	2.7%
Local Government (903)	350	368	5%	2.4%
Merchant Wholesalers, Durable Goods (423)	275	281	2%	1.9%
State Government (902)	241	235	(2%)	1.7%
Educational Services (611)	234	258	10%	1.6%
Broadcasting (except Internet) (515)	169	161	(5%)	1.1%

Source: EMSI 2017.4

Table 5. Top Employers Posting Jobs with "drone" in Body of Posting for latest 12 months (February 2018 – January 2018)

Note: 43% of records have been excluded because they do not include an employer. As a result, the charts below may not be representative of the full sample.

Employer	Bay	Silicon Valley	Employer	Bay	Silicon Valley
Intel Corporation	41	41	Pix4D	8	0
Airware	28	0	Skycatch Inc	6	0
Bds Marketing	13	0	Touch Of Modern	6	0
Softtech Vc	12	0	Alcatraz Ai	3	3
3D Robotics	11	0	Google Inc.	3	3
Mapbox	9	0	Bds Marketing	3	3

Source: Burning Glass

Educational Supply

There are two community colleges in the Bay region issuing 28 awards annually on Aeronautical and Aviation Technology (TOP 09500.00), and one other educational institutions issuing 60 awards annually on this TOP code, for a total of 88 annual awards. One of these educational institutions - Gavilan College - is in the Silicon Valley sub-region and issues a total of 16 awards annually.

Table 6. Number of Degrees and Certificates and Headcount on Aeronautical and Aviation Technology (TOP 0950.00) and Airframe Mechanics and Aircraft Maintenance Technology/Technician (CIP 47.6007)

Gavilan College
Drone/Unmanned Aircraft Systems (UAS) Technology
A.A. Degree
January, 2018

College	Sub-Region	CC Headcount	Associate Degrees	Certificates or Other Credit Awards	Total Awards
Alameda	East Bay	39	0	0	0
Gavilan	Silicon Valley	20	14	2	16
San Francisco	Mid-Peninsula	49	0	0	0
Solano	North Bay	43	1	11	12
Aviation Institute of Maintenance	East Bay	n/a	0	60	60
Total for Bay Region		**151**	**15**	**73**	**88**
Total for Silicon Valley		**20**	**14**	**2**	**16**

Source: Data Mart and Launchboard

NOTE: Headcount of students who took one or more courses is for 2015-16. Awards for Community Colleges is for 2016-17, and awards for other educational institutes is for 2015-16.

Gap Analysis

As stated in the beginning of this report, a traditional gap analysis for occupations in an emerging industry sector is challenging to accomplish since the SOC codes do not accurately capture the emerging occupations, and therefore one is not provided in this report.

While there were 378 postings over the last 12 months with "drone" mentioned in the posting, it is difficult to determine which of those postings actually correspond to an occupation that could be filled by a Community College student unless they had prior experience or a prior degree. Searching for "drone" in the job title in the Bay Region in the last 12 months yielded 59 job postings (with 43 in Santa Clara County).

Student Outcomes

Launchboard does not have data for all of the outcomes listed in the table below at the TOP 06 level. Therefore, student outcomes data is summarized at the TOP 04 level in the table below.

Table 7. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 04 0950 – Aeronautical and Aviation Technology

2014-15	Bay Region (All Programs)	Gavilan (All Programs)	State (0950)	Bay Region (0950)	Gavilan (0950)	Top Performing College in Bay Region (0950)	
% Employed Four Quarters After Exit	68%	79%	65%	66%	86%	Gavilan	86%
Median Earnings Two Quarters After Exit	$12,640	$18,000	$9,210	$8,385	$7,645	San Francisco	$10,230
Median % Change in Earnings	37%	30%	67%	74%	n/a	San Francisco	64%
% of Students Earning a Living Wage	51%	68%	52%	36%	33%	San Francisco	41%

Source: Launchboard

Skills & Certifications

Table 8. Top Skills for Postings with "drone" in the Bay Region (February 2017 – January 2018)

Skill	Postings	Skill	Postings	Skill	Postings
Python	75	LINUX	37	Data Management	24
Software Engineering	68	Product Management	34	Machine Learning	19

Software Development	66	Business Development	32	Administrative Functions	18
C++	41	Customer Service	32	Computer Engineering	18
Sales	40	Speech Recognition	31	Description & Demonstration of Products	18
Git	38	Swift	31	Optimization	18
JavaScript	37	JAVA	28	Product Knowledge	18

Source: Burning Glass

Note: 98% of records have been excluded because they do not include a certification. Therefore, the table is not shown.

Table 9. Education (Minimum Advertised) Postings with "drone" in the Bay Region

Note: 49% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

Education (minimum advertised)	Latest 12 Mos. Postings
High school or vocational training	17 (9%)
Bachelor's Degree	146 (75%)
Master's or Doctoral Degree	30 (16%)

Source: Burning Glass

Methodology

Occupations for this report were identified by use of skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard www.calpassplus.org/Launchboard/

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

Contacts

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