

Process of Approval for Programs Subject to Academic Senate Purview

New Certificate: **Marine Technology**

1. Support for the program on campus. I am working with CTE, Admin, District.
2. Anticipated resources/costs: A&R support to enroll students into programs.
3. Need or demand, see LMI data attached
4. Mission Appropriateness: Relevant to: *offers educational opportunities and support for completion of students' career-technical goals*

Curriculum required: Apprenticeship Marine Technology

Courses:

APMT 51 Boatworks 101 Yacht Electrical Systems

APMT 52 Boatworks 101 Yacht Propulsion Systems

APMT 53 Boatworks 101 Yacht Craftsmanship Lab

APMT 94 Occupational Work Experience - Marine Technology Apprenticeship

Programs:

Marine Technology Boating 101 B CA - Certificate of Achievement

Marine Technology Yachting 101 A CA - Certificate of Achievement

5. FTES/FTEF required: none required.
6. Implementation Schedule: Start Fall 2022
7. Outcomes: success will be measured by the number of students who are employed during/after the apprenticeship. See SLO's attached
8. Program Map -See Guided Pathway attached.



Marine Technician Occupations Labor Market Information Report Las Positas College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
July 2021

Recommendation

Based on all available data, there appears to be a small “undersupply” of Marine Technician workers compared to the demand for this cluster of occupations in the Bay region and in the East Bay sub-region (Alameda and Contra Costa counties). There is a projected gap of about 23 students in the Bay region and 6 students in the East Bay Sub-Region.

Introduction

This report profiles Marine Technician Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Las Positas College.

- **Motorboat Mechanics and Service Technicians (49-3051):** Repair and adjust electrical and mechanical equipment of inboard or inboard-outboard boat engines. Excludes “Bus and Truck Mechanics and Diesel Engine Specialists” (49-3031).

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Long-term on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 35%

Occupational Demand

Table 1. Employment Outlook for Marine Technician Occupations in Bay Region

Occupation	2019 Jobs	2024 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Motorboat Mechanics and Service Technicians	221	188	-32	-15%	135	23	\$12	\$22
Total	221	188	-33	-15%	135	23	\$12	\$22

Source: EMSI 2021.2

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Marine Technician Occupations in East Bay Sub-region

Occupation	2019 Jobs	2024 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Motorboat Mechanics and Service Technicians	62	58	-3	-6%	38	6	\$11	\$21
Total	62	58	-4	-6%	38	6	\$11	\$21

Occupation	2019 Jobs	2024 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
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Source: EMSI 2021.2

East Bay Sub-Region includes: Alameda and Contra Costa Counties

Job Postings in Bay Region and East Bay Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Jun 2020 - May 2021)

Occupation	Bay Region	East Bay
Motorboat Mechanics and Service Technicians	10	8

Source: Burning Glass

**Table 4a. Top Job Titles for Marine Technician Occupations for latest 12 months (Jun 2020 - May 2021)
Bay Region**

Title	Bay
Boat Mechanic	2
Marine Machinery Mechanic, Wg	2
Boat Mechanic And/Or Sailboat Operator	1
Marine Industry Mechanic	1
Marine Machinery Mechanic Leader, WI	1
Marine Machinery Mechanic Wg	1
Marine Mechanic	1
Marine Technician/Boat Mechanic	1

**Table 4b. Top Job Titles for Marine Technician Occupations for latest 12 months (Jun 2020 - May 2021)
East Bay Sub-Region**

Title	East Bay
Boat Mechanic	2
Marine Machinery Mechanic, Wg	2
Boat Mechanic And/Or Sailboat Operator	1
Marine Machinery Mechanic Leader, WI	1
Marine Machinery Mechanic Wg	1
Marine Technician/Boat Mechanic	1

Industry Concentration

Table 5. Industries hiring Marine Technician Workers in Bay Region

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2019)	Jobs in Industry (2024)	% Change (2019-24)	% Occupation Group in Industry (2019)
Other Personal and Household Goods Repair and Maintenance	78	66	-15%	40%
Appliance Repair and Maintenance	26	26	0%	14%
Reupholstery and Furniture Repair	15	16	7%	8%
Motorcycle, ATV, and All Other Motor Vehicle Dealers	22	15	-31%	7%

Source: EMSI 2021.2

Table 6. Top Employers Posting Marine Technician Occupations in Bay Region and East Bay Sub-Region (Jun 2020 - May 2021)

Employer	Bay	Employer	East Bay
United States Coast Guard	4	United States Coast Guard	4
Norcal Mastercraft	1	Norcal Mastercraft	1
California Parks Company	1	California Parks Company	1
Basecamp Hospitality	1	Basecamp Hospitality	1

Source: Burning Glass

Educational Supply

There are no community colleges in the Bay Region issuing awards on average annually (last 3 years ending 2018-19) on TOP 0948.50 - Recreational Vehicle Service.

Gap Analysis

Based on the data included in this report, there is a small labor market gap in the Bay region with 23 annual openings for the Marine Technician occupational cluster and no annual (3-year average) awards for an annual undersupply of 23 students. In the East Bay Sub-Region, there is also a small gap with 6 annual openings and no annual (3-year average) awards for an annual undersupply of 6 students.

Student Outcomes

There are no student outcomes to report on TOP 0948.50 because there are no community college programs in the Bay region on this TOP code.

Skills

Table 9. Top Skills for Marine Technician Occupations in Bay Region (Jun 2020 - May 2021)

Skill	Posting	Skill	Posting
Repair	10	Scheduling	2
Equipment Assembly	4	Boat Maintenance	1
Machinery	4	Cleaning	1

Skill	Posting	Skill	Posting
Vessel Equipment	4	Customer Service	1
Machine Tools	3	Database Administration	1
Predictive / Preventative Maintenance	3	Engine Replacement	1
Calipers	2	Engineering Support	1
Dial Indicators	2	Estimating	1
Electrical Diagrams / Schematics	2	Forklift Operation	1
Guest Services	2	Fuel Systems	1
Industrial Equipment Industry Knowledge	2	HVAC	1
Industrial Production	2	Hand Tools	1
Micrometers	2	Machining	1
Occupational Health and Safety	2	Material Handling Equipment	1

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 CCCCCO 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

For more information, please contact:

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Program Mapping Template (Program: _____)

AA
 AS
 AA-T
 AS-T
 COA
 CC

*This is an example course sequence. All plans can be modified to fit the needs of part-time students by adding more semesters.
 Students must meet with a counselor to complete an individualized educational plan.*

SEMESTER 1 - FALL

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				

SEMESTER 2 - SPRING

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				

SEMESTER 3 - SUMMER

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				

SEMESTER 4 - FALL

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				

SEMESTER 5 - SPRING

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				
Total Major Coursework				
Total Units Required				

Program Mapping Template (Program: _____)

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SEMESTER TOTAL				

SEMESTER 4 - FALL

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				

SEMESTER 5 - SPRING

Courses	Units	Semesters Offered	Prereq?	Advisory Notes
SEMESTER TOTAL				
Total Major Coursework				
Total Units Required				

PSLOs / SLOs

Boatworks 101: Yacht Electrical Systems

1. Be able to use a voltmeter to locate faults
2. Be able to determine the proper wire size for an installation.
3. Be able to discuss the common principles of Craftsmanship

Boatworks 101: Yacht Propulsion Systems

1. Be able to identify components of a marine diesel engine
2. Be able to perform an engine oil change.
3. Be able to discuss the common principles of Craftsmanship

Boatworks 101: Yacht Craftmanship Lab

1. Replace an alternator
2. Perform a compression test
3. Perform a cylinder balance test

Certificate Boating

1. Be able to properly diagnose a marine electrical system
2. Be able to repair common engine issues
3. Be able to perform routine maintenance.

Certificate Yachting

1. Perform diagnostics on a marine electrical system
2. Perform a cylinder leakdown test
3. Perform an oil change