



SMALL VESSEL FABRICATION AND REPAIR

DESCRIPTION – *Small Vessel Fabrication and Repair* is an Associate in Applied Science program with the main goal being to prepare individuals for employment in boat maintenance, repair, and manufacturing industries. Students work on a variety of “real world” repair, service and construction projects. Hands-on instruction is provided in composite boat construction and repair, marine woodworking and joinery, lofting, plug and mold construction, and marine spray painting systems. Boat yard operation skills are practiced year round. These include marine straddle-lift operation, crane operation, forklift and hydraulic trailer operation. There are also courses that focus on the rigging, mechanical, plumbing, propulsion, and electrical systems of boats.

The faculty offers a wealth of knowledge and experience to the students. Each instructor’s craft has been developed and honed over twenty years in the marine industry. Faculty repair and building projects and technical articles have been published in texts and national trade magazines.

The majority of instruction for the program is held at the Marine Education and Training Center (METC) located on Sand Island, Oahu. The METC is located on Keehi Lagoon and is a state-of-art training facility. It features four large work bays to allow work on vessels up to 45 feet, a concrete pier equipped with two cranes to allow work on vessels in the water, finger piers for removing vessels from the water employing a marine straddle-lift, as well as classroom, laboratory, and office space. The METC ranks as one of the premier training facilities in the United States.

COMPETENCIES OF GRADUATES - Marine technicians acquire a wide variety of skills. They can fabricate, repair, and modify composite boats according to blueprints and customer specifications using hand tools, power tools, and measuring instruments. They can build interior furniture and apply marine paints with specialized spray equipment. They can build composite boats and molds using a variety of construction techniques. Marine technicians can survey, troubleshoot, repair, and install new components in DC electrical systems, mechanical, sailboat rigging, and plumbing systems. They can perform basic service, alignment, and installation of propulsion systems. The technician confers with customers and supervisory personnel to reach agreement on the work order, which outlines the scope of the work.

COST - Total cost of books, tools and supplies for the two-year program is approximately \$1,500

TECHNIACAL STANDARDS - Can be found at <http://tech.honolulu.hawaii.edu/marr>

PHYSICAL FITNESS - Most of the marine industry, and thus this program, is physically demanding. To fulfill the requirements of the shop portion of the class, the student must have the strength and agility to climb a twelve-foot ladder onto a vessel’s deck, get on the deck, walk around the cabin and descend to ground. The student must be able to jump onto the deck of a boat that is eighteen inches below pier level, work in crouching or standing positions, and be able to lift and transport 40 pounds from the floor onto a table top.

PHYSICAL HAZARDS - There are hazards in the boat maintenance and repair industry as well as this program. Great emphasis is placed on operating tools and equipment safety and knowing what protective gear is necessary and how to wear it. A partial list of the hazards that students are trained to avoid are rapidly moving parts and blades, live electrical circuits, exposure to resins, solvents, paints, exhaust fumes and dust.

Students will be required to fill out a standard OSHA screening questionnaire. This will aid in determining whether or not they can safely wear an organic respirator.

EMPLOYERS - Marinas (general boat service and repair) and firms that specialize in marine electrical, rigging, plumbing and/or propulsion systems. Boat manufacturers and companies performing fabrication of fiberglass reinforced plastic and other composite materials. Painting and refinishing companies. Companies that fabricate custom wood products (furniture and cabinetry) and companies that employ heavy equipment operators.

CAREER LADDER - Assistant to Crew Chief, Crew Chief, Foreman, Manager, and Plant Manager (also Marine Surveyor, Small Business Owner, and Broker)

EMPLOYMENT OPPORTUNITIES - Openings available locally with boat builders, shipyards, marine service companies, rigging companies, painting firms, composite manufacturers, furniture and cabinetmakers. Many opportunities are available all over on the Mainland U.S.

WAGES - Beginning wages average between \$10 - \$15 an hour. Highly skilled technicians earn more.

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