

PROGRAM BASICS

Composites is the future of construction, from furniture to aerospace. The material's light weight and durable nature makes it the go to choice for endless types of construction. Instructors of The Landing School's Composite Boat Building program select the designs for the project boats based on the depth of information and skill that students can gain from their construction. Composite's also has a large end of the year project, called personal projects, where individual students create a project proposal and act as though they are in a real business proposing a new project, with building techniques, budget and schedule. In the past, students have built violins, car parts, and bicycles just to name a few.

The diversity of skills achieved gives students more options after they graduate. Imagine working high atop a massive windmill that powers an entire town. Or working on the most cutting edge airplane. Or even building surfboards in your own shop. Our graduates have done all of this and more.

Before You Begin

In order to get a running start on your program, consider review these websites:

Math Reviews: <http://khanacademy.org>
<http://www.webmath.com/index.html>
<http://www.freemathhelp.com/trigonometry-help.html>

Boat Terminology: <http://www.boatsafe.com/nauticalknowhow/gloss.htm>

What You'll Learn to Do

Students study the strength, stiffness and structural mechanics of many different composite materials, such as fiberglass, carbon, and aramids. They are given instruction in the fabrication of those materials, from hand layup to vacuum-infusion and pre-preg part-making in both open- and closed-molding environments.

Throughout the school year, students examine the effects of the various composite materials on the production methods by assessing their structural strengths first-hand and witness how the choice of materials interfaces with the design and production of a boat. Design and systems elements are also incorporated into the curriculum so students have a foundation in the entire boat building process, from concept through final construction. Subjects of study you will cover include:

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| Shop Practices and Tools | Atmospheric Ovens, Closed-Molding and Vacuum-Infusion |
| Construction and Repair Techniques | Fabrication Techniques and Material Selection |
| Plugs and Molds | |

Careers

U.S. composites manufacturing is a \$13.7 billion industry in which some 110,000 people were employed in 2010, according to the American Composites Manufacturers Association. The marine industry uses composites for commercial, pleasure and naval boats and ships, moorings, buoys, marine docks, floats, outboard motors, sterndrives, water skis/wakeboards, cruising boats, sailboats, PWC's and Jet boats. Students who graduate with a diploma or degree in Composite Boat Building may find a career in Composite Boat Building or in an alternative field such as:

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| Aeronautic construction | Auto racing crew | Building architecture |
| Racing yacht construction | Rigging design | Sports equipment design |

Employment Rate: 83%
Average Starting Salary: \$41,600

Future Forward

The Landing School isn't solely focused on today's techniques. Because our students will one day be leading the industry we work on innovating standard practices for better efficiency taking into consideration cost, materials, and the latest technology. Several projects students are currently working on are:

Israeli-Palestinian Windblade Project

Students at PennState are developing windblades that will power waterpumps in a joint Israeli-Palestinian project. PennState students are researching materials in terms of cost and durability versus stiffness. Based on their results, our students will build the windblades. The end goal is to be able to send windblade kits to developing nations so that they can cheaply and easily reproduce windblades to power water-pumps in countless remote areas. This project has uses just about anywhere in the world.

Moroccan Fish Cooler

Artisan boats on the coast of Morocco outnumber any other boat. The major fault in these boats is that storing fish after they are caught is difficult. The catch sits in the bottom of the boat until fishermen get back to the dock. By then it's half spoiled. It can't be shipped for export and sells at a very low price. What they need is an efficient, non-electric cooler. We are developing a marine cooler that's as good as the most expensive coolers on the market but much cheaper so that fishermen in developing nations can have a better opportunity to sell their catch. This would solve many problems not just in Morocco, but elsewhere. The development this cooler it would be a first of it's kind.