

The Michigan School

By Dave Lesh

Located in the Petoskey area of northern Michigan, The Michigan School's nine month vocational program will teach students contemporary boat building and marine industry skills. Composite manufacturing technology is used extensively in a number of industries such as aerospace, recreation, transportation and alternative energy. The skills learned at TMS will be widely transferable.

Student builders

There are immediate employment opportunities for graduates of the Marine Composite Program, so it will be offered first in Fall, 2011. Programs in Marine Systems and Restoration will roll out later in 2012.

Classes in the safe use of contemporary boat building materials and methods such as resin infusion, wet bagging, fiberglass and cold molding have been developed with the guidance of some of the leading composite engineers in the industry. The project boats in this course will be 12-22' long and constructed of practical composites. These will be built from start to finish, then capped off by a formal launching at graduation. Students will construct decks, hatches and other components using composite methods and materials. Basic mechanical system installation will also be part of the curriculum.

Several manufacturing sectors expect strong growth in the composites industry in the coming years. Composite manufacturing generates \$13.7 billion a year in the USA, and \$45.3 billion a year for suppliers and manufacturers, according to the American



Composites Manufacturing Association's 2009 Composites Industry Report. Boeing's Current Market Outlook 2010-2029 predicts that air carriers in North America will take delivery of 7,200 new aircraft, valued at \$700 billion, over the next 19 years. Lucintel predicts the composite automotive market will reach \$1.5 billion in 2014 in their Opportunities for Composites in the North American Automotive Market 2009-2014: Trends, Forecast and Opportunity Analysis (May 2009).

The Michigan School will teach boat building and marine technology as an application of composite materials, yielding graduates who can respond to the need for a workforce skilled in composite construction and manufacturing. Students will learn how to create composite fabrication using open molding, wet bagging, resin infusion and pre-preg manufacturing methods. The design and construction of composite tooling will also be taught with a focus on the materials and methods used in industry to construct one-off or production tools.

A strong emphasis will also be placed on teaching "real-world" project management, communication, and leadership skills. The course will be taught through a series of lectures, guest instructors, bench demonstrations, and the fabrication of composite boats. Guest lectures and field trips to regional boat builders will augment the course.

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The Michigan School will offer programs in Marine Systems that include basic Mechanical System Installation and Marine Technology.

