

New Tech Advisor Mike Barnard



Our newest Technical Advisor, Mike Barnard, is a recent graduate of Winona State University's Composite Materials Engineering program. It is the only accredited undergraduate degree in composites engineering in the USA.

Mike has enjoyed water sports his entire life, and is beginning to take interest in the different aspects of watercraft.

He has also been around a manufacturing environment his entire life. His grandfather was a wood

worker, his father a metal worker, and continuing this material progression in his family, Mike is involved with composites. His father taught Mike the basics of both wood and metals manufacturing while he was growing up in a Minneapolis suburb.

Mike's combined technical and personal skills make him a strong asset in our Technical Department. ■



New tech advisors Mike Barnard and Don Gutzmer reflect on the conference table top they recently renovated by laminating a layer of carbon fiber over the old plastic laminate top. The carbon was vacuum infused, coated with three coats of WEST SYSTEM® 105/207 and sprayed with 10 coats of 2-part polyurethane, which was wet-sanded to 2,000-grit then buffed to a high gloss. Any questions?

The Composite Materials Engineering Program at Winona State University

By Mike Barnard

Winona State University in southeastern Minnesota has offered a undergraduate degree program in Composite Materials Engineering since the late 1980s, but it is still relatively unknown. With graduates now working all across the country, it is gaining popularity. Of the 140+ freshman who declare Composite Materials Engineering as their major, about 20-25 students graduate each year from the program.

The degree sounds very specific but in reality is as broad as a mechanical engineering degree. As with all engineering programs, it is grueling.

Composites are used more and more in everyday life, making Winona State's Composites program more relevant than ever. Graduates of Winona State's program are ready to evaluate, test, redesign composites and composite structures.

While taking the usual science courses, (calculus, differential equations, physics, etc.) the students are also sub-

mersed in basic engineering classes such as fluid mechanics, statics, and dynamics. After a couple years of doing well in these classes, the students apply to be in the composites program where they'll take the upper-level courses such as manufacturing and microscopy.

Winona State University has all the basic composite manufacturing equipment available to students. Autoclave, filament winding, pultrusion, injection and RTM are some of the methods taught in the program. The labs at Winona State University include characterization equipment as well. Much of this same equipment is routinely used here at Gougeon Brothers.

Winona State's Composite Materials Engineering department rents its equipment and student worker time to provide test results to businesses that don't have proper testing facilities. Businesses use this mainly for normal ASTM standard tests, but there are many different tests students can perform. ■