ASCE Concrete Canoe Design and Construction

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Abstract

The National Concrete Canoe Competition (NCCC), hosted by the American Society of Civil Engineers (ASCE), is a collegiate competition for universities to find more efficient, stronger, and lighter canoes made with lightweight concrete and lightweight reinforcement. Each canoe has a set of design criteria which it must uphold, which can be found at: http://www.asce.org/rules-and-regulations/. The overall objective of the NCCC is to allow students to gain hands-on experience with concrete construction as well as improving leadership skills and project management skills. Each year, universities modify or design a new canoe mold or mix in efforts to improve the overall performance of the canoe. The goals within Embry-Riddle's student chapter is to improve the construction process, design, performance, and strength of the canoe. The improvement of the construction and design is a trial-and-error based method with the understanding of material properties. For the previous two years, Embry-Riddle's ASCE student chapter has actively competed in the NCCC with great improvements and modifications in the construction process from the 16-ft, 450 lbs Miracle to most recent canoe, the 19-ft, 200 lbs Moe Moe Mano. Embry-Riddle's ASCE student chapter will continue to improve the design, construction, and performance of the concrete canoe with the implementations of new mold designs, exploration of new design mixes, and the casting of the concrete.