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Hornet civil engineers vying for championship

The term “concrete canoe” may conjure up an ominous scene from a “Godfather” film in which someone is about to be disposed of in the middle of a lake. But the concrete canoe built by Sacramento State’s student chapter of American Society of Civil Engineers (ASCE) is not about to sink. Rather, the vessel, which is lighter than water but strong enough to withstand the weight of students, is among the entries in the Mid-Pacific Regional Conference in Berkeley, March 22-24.

The annual competition, hosted by Sacramento State last year, will include five team events that pit student construction engineers from 11 universities. In addition to the concrete canoe, the teams will build a stable earth wall, a steel bridge and a spaceport, and present plans for treating wastewater.

Individual students may also submit a Mead Paper, a technical paper on ethical issues facing civil engineers. This year’s topic is “Ethics and Globalization.” Sacramento State graduate Joshua Wagner, Army Corps of Engineers and industry adviser to the student chapter, won the regional competition in 2009.

Students have been working hard to make their entries more competitive this year, drawing from the work they’ve done in classes and getting extra help from mentors.

Erikson Betts, president of Sac State’s student chapter, says students have been teaming up since the fall semester to put together plans for the various competitions. “A lot of students are involved with the preliminary work,” he says. “And we expect to send full teams to Berkeley for each of the events.”

Competing in the various events is fun, to be sure. But it also permits students to apply what they are learning in the classroom to design and build actual structures. That practical experience on a resume can catch the eye of employers seeking skilled graduates who can thrive in a team environment.

Besides finding time between classes, projects and jobs to work on the competitions, students are also working on finding resources to cover the cost of
materials. Each team has a budget and some funding provided by ASCE, Erikson says, but extra funding is always a plus. Donations may be made by contacting the Department at (916) 278-6982 or by emailing Neysa Bush at nbush@ecs.csus.edu.

“We appreciate any help we can get,” Erikson says, “whether it is a donation of materials or money, or simply support for our teams when they head for Berkeley at the end of March.”

**Mid-Pac events:**

- **Concrete Canoe** – The team designs, builds and races a concrete canoe that must comply with 76 pages of specifications.
- **Geo-Challenge** – The team designs and builds a Mechanically Stabilized Earth (MSE) wall to withstand a 50-pound top load and a 25-pound side load, using the least amount of reinforcement possible.
- **Steel Bridge** – The steel bridge design must meet “client” specifications and optimize both performance and economy. The bridge, which is tested with various loads, is built on site.
- **Transportation** – A spaceport is design that addresses land use, operational, sustainability and financial factors. The team submits a paper in early March and makes a presentation during the competition.
- **Water Treatment** – The team designs a filtration strategy in advance, constructs a filter for the competition, and is judged on a number of factors, including the quality of contaminated water after it has passed through the filter.

For media assistance, contact Sacramento State’s Public Affairs office at (916) 278-6156.

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