

Building Future ENGINEERS

SAME Engineering and Construction Camps

At SAME Engineering and Construction Camps, high school students from across the country learn engineering solutions and skills from real engineers while getting a taste of what it means to work for and with the military services.

Only at SAME camps can you build a chair with three legs and sit on it, construct a concrete beam and smash it, or construct a cardboard boat and race it!

These exciting week-long camps take place during the summer months in a variety of settings—the colorful Colorado Rockies, the beautiful Southern California Coast, or the historic Mississippi Valley.

**For more information,
visit www.same.org/camps.**

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SAME Engineering and Construction Camps

SAME's annual week-long Engineering and Construction Camps provide a hands-on learning experience for high school sophomores, juniors and selected seniors who are interested in pursuing careers in architecture, engineering or construction. Students have three camp experiences to choose from:

- SAME/U.S. Air Force Academy Engineering & Construction Camp in Colorado Springs, Colo. (only for those students interested in attending a service academy);
- SAME/Seabees Engineering & Construction Camp at Naval Base Ventura County in Port Hueneme, Calif.; and
- SAME Southeast Engineering & Construction Camp at the U.S. Army Engineering Research and Development Center in Vicksburg, Miss.

Learning by Doing

No professional engineer would try to build something without a design, but that's exactly what students are asked to do at the SAME/U.S. Air Force Academy Engineering & Construction Camp in Colorado Springs., Colo.

In one of the most popular hands-on construction activities, students are given a basic lesson on construction, and then told to take their supplies of concrete, steel reinforcements and adjustable forms and start building concrete beams. The task challenges students to use their imagination, as well as their problem solving and teamwork skills. The hands-on experience helps ensure that students see, experience and retain what they learn.

To drive the lesson home, the cured beams are then subjected to weight-bearing tests, and as the beams begin to collapse under the load stress, USAFA instructors and engineers lead a discussion on the behavior and performance of the beams and the importance of proper design. The 2005 winning beam held more than 18,000-lbs!

Throughout the week, students also have the opportunity to build sprinkler systems, make their own wastewater filters, and participate in team-building and problem-solving activities. And for detailed information on how things work in the workplace and in the field, students tour the USAFA laboratories and Cadet facilities.

The 60 students who attended the 2005 camp enjoyed the same living arrangements and basic camp curriculum that USAFA cadets experience before starting their junior year. It's a great opportunity for students interested in attending the Academy to get a first-hand look at life on campus.



Working as a Team

The 2005 SAME/Seabees Engineering and Construction Camp welcomed 39 students to Naval Base Ventura County in Port Hueneme, Calif., for lessons in engineering and construction as well as leadership and teamwork. Students came from as near as Los Angeles County, and as far away as Alaska, Hawaii and Florida.

“The camp encourages the students to pursue careers in engineering, and gives an introduction to the work of military engineers and the Seabee community,” said Lt. Jason Wood, an Equipment Readiness Officer with 31st SRG who volunteered as a mentor. “You can see an excitement in learning about engineering as the kids work with the instructors and each other to design and build the various projects.”



The camp’s signature engineering activity gives students the chance to design and build cardboard boats, then race them in the 25-m base pool. Boats are judged on design, construction and the race results. Katy Deiters, a member Squad Z, which won the 2005 boat race, said basically it all came down to staying afloat. “It was very important for teamwork,” she said.

The camp encourages students to set goals and then come up with their own designs and ideas and carry them out to completion. This is evident as students build stick bridges, boats and concrete beams using all raw materials.

Additionally, students learn basic survival skills and are introduced to life working with and for the military services.

Building Confidence

At the SAME Southeast Engineering & Construction Camp in Vicksburg, Miss., the personal experience for campers can prove to be just as valuable as the lessons on river and environmental engineering.

When Camp Director J. Leo Phillips met the 40 students who attended the 2005 camp, he asked them why they had chosen this particular camp experience. There were the usual responses: “I’m interested in engineering” and “It sounded like there would be exciting activities.” Then one young lady raised her hand. “My mother made me come,” she said.



During the week-long camp, students engaged in a variety of activities aimed at piquing their interest in engineering-related fields and building their self confidence. Students learned how to identify a wetland using information on soils, vegetation and hydrology; performed GPS surveys; built bridges out of soda straws; and had a chance to pilot a 170-ft tow boat on the Mississippi River. Students also toured a concrete batch plant and practiced pouring concrete to make mats for flood control and to maintain channel alignment.

“With each passing day, this young lady became more and more involved,” Phillips said. “In fact, she became an increasingly positive influence on her team and the entire Camp. By the end of the week, this ‘timid’ young lady earned an award for having the most spirit on her team.”

Special thanks to Capt. Richard Martin, U.S. Air Force, 2005 Camp Officer-in-Charge, J. Leo Phillips, P.E., U.S. Army Corps of Engineers, 2005 Camp Director, and Linda Wadley, Naval Facilities Expeditionary Logistics Center, for contributing to this article.

Be a part of the SAME Engineering and Construction Camp experience!

As a Student...

Each SAME camp offers high school sophomores, juniors and selected seniors the opportunity to learn leadership, engineering and construction skills from professionals in the field, while having fun and making friends with students from all over the world.

To attend a camp, a student **MUST** be sponsored by a local SAME Post (chapter). The student is responsible for paying a portion of the registration fee; the sponsoring SAME Post will pay the remainder of the fee and the cost of airfare to the camp. To qualify for consideration students must be on a high school track that will prepare them for attendance at an accredited engineering college or university; have an expressed intent to pursue a degree in architecture, engineering or a related field; have demonstrated leadership characteristics through participation in extra-curricular activities, sports and/or community activities; be physically fit and healthy; and be of high moral character. **For information on attending a Camp, go to www.same.org/camps.**



As a Mentor...

The SAME camps also offer SAME Young Members valuable opportunities to mentor tomorrow's leaders. Mentors assist with student activities, and teach students about real-world architecture, engineering, environmental science or other related disciplines in which they have experience. Mentors spend the week at the camp and are assigned to groups of students to help guide, train, educate, coach and lead the campers through each day's activities. SAME Young Members who are interested in mentoring should contact their local Post to obtain sponsorship (there is no fee for Camp Mentors).

To become a Mentor, you must be a SAME Young Member with a record of active participation at the Post, Region, or National level; obtain an endorsement from the President of the SAME Post that will be sponsoring you; have experience in mentoring or coaching young people; commit to attending the entire week-long camp; be experienced in military, civil or environmental engineering, or a related field, in the public or private sector; and be physically fit and healthy. **For information on becoming a Camp Mentor, go to www.same.org/camps.**

As a Sponsor...

Watching students' excitement grow as they see the possibilities of careers in engineering, and observing their personal achievements during the course of the week are just two of the many reasons to become a SAME Engineering & Construction Camp Sponsor.

Join the list of sponsors who support the SAME Engineering & Construction Camps. Sponsor support—and the support of the volunteers and mentors—helps make the camps an exciting learning experience for students. **For information on becoming a Camp Sponsor, go to www.same.org/camps.**

Previous Sponsors have included:

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