Engineering Open House

Every year, as a part of National Engineers Week, the College of Engineering opens its doors to areas schools. During this event, our engineering faculty and students give demonstrations and offer hands-on activities related to science and engineering. This is a good opportunity for students to learn about what engineering students study and what professionally engineers really do.

This is a list of typical Open House demonstrations

Chemical Engineering

Fuel Cell Car

This is a prototype of a car that can run on water. Actually, This is a hydrogen fuel cell -powered car that uses water as the source of hydrogen (H_2+ O =Water). Some auto makers are producing a limited number of fuel-cell powered automobiles.

Civil Engineering

Clean Drinking Water

Through the process of of coagulation, surface waters (lakes, rivers,etc.) are made clear and safe to drink. See the water treatment process beginning with the addition of the chemical, aluminum sulfate, the flocculation of unwanted particles (includes harmful bacteria) to the clearing of the solution as the "floc" settles to the bottom. Filtration is the final step.

West Point Bridge Program

This is a simple to use and fun computer program that will allow a student to design a bridge truss structure by clicking on the joints and dragging members. Students will then be able to test their bridge with a click of a button on the mouse to see an animated truck move across the bridge. If the bridge is good and safe, the truck will safely pass to the other end. Otherwise, it will fall into the river. The program shows which members failed and suggests that these members be made larger.

Total Station

Measuring elevations and distance accurately is easy when you have the right equipment. An up-to-date device used by most surveyors to record legal land descriptions and to prepare a site for construction, the Total Station measures distance, angles and elevations extremely accurately (to 0.005 of a foot and to 1 second of an angle). The device sends a signal to a prism and measures the time it takes to travel to and from that prism in order calculate 'distance'. Surveyors normally refer the Total Station to a known point called a 'benchmark' in order to determine the exact position of unknown points on the earth.

Mechanical Engineering

Stirling Engine Model

The Stirling Engine can run on any heat source such as solar, geothermal, hydrocarbon combustion, nuclear or electrical. Stirling engines are low maintenance and can run for years unattended in remote locations such as space probes and arctic weather stations. Stirling engines are efficient, quiet and produce no pollution other than the heat source.

Bernoulli's Principle and Fluid Flow

A demonstration of Bernoulli's Principle and a student-designed Venturi Meter for investigating the flow of fluids.

Electrical and Computer Engineering

Smart House

A Dept. of Energy grant has funded this application of a hydrogen-powered fuel cell to meet the energy needs of a modern home. The traditional source of electricity (fossil fuel burning power plants) has dire environmental consequences. The electrical grid system has also experienced failures, plunging large parts of the country into darkness for many hours. The fuel cell, located outside the Engineering Laboratory Building, in concert with Alabama Power, provides electricity to the house prototype, located inside, to operate its many modern appliances. The house is "smart" because the "controller" monitors the "loads" on the energy system and prioritizes the operation of those appliances required for the comfort and convenience of the home dwellers.

Laser and Fiber Optic Communication

Did you know that light can transmit sound? Listen to a song that is carried by laser light. Also, see how your own voice can be heard after it has been converted to light, coupled into, through and out of an optic fiber.

Traffic Light Controlled System

This is a traffic light system that illustrates the generation of each signal and the delay associated with it.

Digital Lighting Control System

This is residential and commercial lighting under microprocessor-based control. In addition to the economical use of electrical energy, this system provides convenience, efficiency, and security to its users.