

Salukis turn impulses to movements



BRANDON CHAPPLE ~ DAILY EGYPTIAN

Using wires attached to his forearms, Jim Ehrenstrom, a senior in electronic systems technology from Pinckneyville, watches as he moves the arms of the Rhino XR4. Ehrenstrom is part of a project to develop robots that respond to muscle flexes. In roughly 15 years, the technology will give amputees almost full use of a robotic limb, he said. Timothy Krajcir, a 63-year-old man from Allentown, Pa.

Students build muscle controlled robots for class

Christian Holt
DAILY EGYPTIAN

Jim Ehrenstrom said his favorite part of his electronics troubleshooting and maintenance class was trying to hit his classmates with his robot.

Three seniors studying electronic system technologies learned to control a metal arm ending with a small clamp using technology and a little of their own muscle power. Ehrenstrom and Gavin Flure, both from Pinckneyville, and Corey Tumpane from Hinsdale used what they learned in Brian Kearney's class, information from other classes and even some things they taught themselves.

Kearney, an associate professor of electronic system technologies, said he requires his students to pick a special project and encourages them to come to him with ideas.

"This one was partially done from last semester but they didn't really get too far with it," he said.

Ehrenstrom's muscles and a computer program called Robo Talk controlled the robot. Flure was the only one of the group members who had previous experience with the program.

Ehrenstrom used his right arm muscle to move the robot right and his left to move the robot left. To move forward, Ehrenstrom had to synchronize his arm muscles to

move at the same time.

"He supplies the muscle, I do the programming," Flure said. "Whenever Jim flexes a muscle, we get that voltage through amplifiers here, which will boost it up 1,000 times."

Ehrenstrom said his group had gotten more use out of the project than any group before it. He said just getting the robot to work at all was good enough for him.

Ehrenstrom said he wished he could work on the project more next semester but is graduating on Saturday. He said he hoped Flure and Tumpane would be able to continue their work and possibly enhance the project by adding more amplifiers and getting more power out of the robot.

Ehrenstrom and Flure both

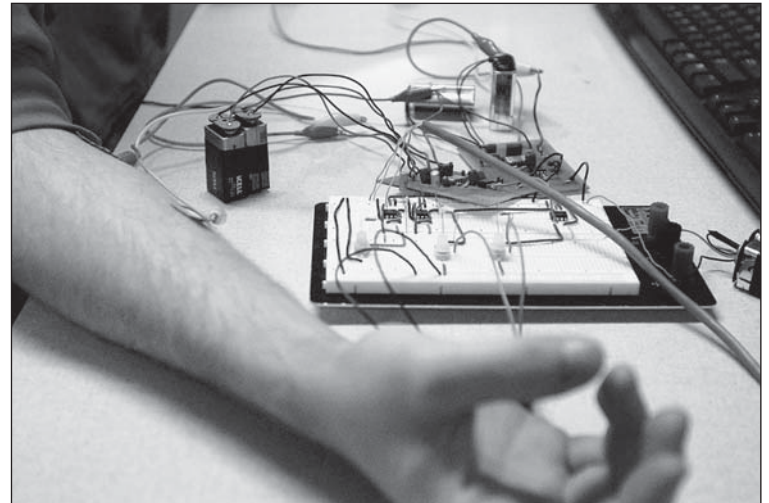
have an interest in biomedical procedures and said one day they would like to work with similar but more advanced robots. They said they hoped to eventually build robots that used brain waves as control systems.

Kearney said it was impressive the group had gotten so far because only Flure had a background in biomedical procedures. The other two students had to teach themselves the theories.

For now, the students said they were happy with the outcome.

Kearney said the group had met all of its goals on the project and would receive A's in the class.

*Christian Holt can be reached at
536-3311 ext. 268
or cholt@siu.edu.*



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Using human muscle and robotics technology, Ehrenstrom demonstrates how to move a robot with wires attached to his forearm. If the technology continues to advance, amputees may have full use of a robotic limb in the not-to-distant future, he said.