ROBOT HELPING SVSC STUDENTS

Computer and engineering students at SVSC are learning the basics of robotics with the help of a rhino. Not the one-horned behemoth, but a high-tech robotic system is being used for education, research and industrial planning.

"Rhino" is the trade name given to the robot by its manufacturer, Sandhu Machine Design Incorporated of Champaign, Illinois. It was purchased this fall by the school of Science, Engineering and Technology to give students hands-on experience with the design and programming of robots.

With more manufacturers turning to robots to increase efficiency and production, there is going to be a demand for people with expertise to maintain and program them, said Dr. Altaf-Ur Rahman, associate professor of electrical engineering.

"By working with a scaled-down robot, students will bring valuable experience to future jobs dealing with industrial models," Rahman said. "The techniques you follow for programming this small robot can also be applied to a larger one. There is no difference."

The unit consists of a long, multi-hinged arm and rotating hand that can lift objects weighing up to two pounds. The arm/hand assembly is attached to a body set on a sliding track, which allows the entire unit to move laterally.

Two SVSC classes are currently using the robot. One course examines the application of microcomputers, with students programming the robot to make sequenced movements and do simple tasks such as lifting and moving objects. Programming is accomplished with the aid of micro computers owned by SVSC.

The course allows students to see their programs working. "They can punch numbers on the computer and get a tape readout, but not physically see what is happening. Now they can watch the movement of the arm and know if their program works," Rahman said.

Besides being able to watch the robot perform as ordered, students are learning to transfer programs onto computer chips. A program circuit is designed, photographed, and then reproduced on a small chip. The chip is plugged into the robot's circuits and the unit responds as if it were being directly controlled by a computer.

In a digital control class, students study the robot's motors and design, including the electric motors which power the unit's arm and chassis. Rahman noted that most robot manufacturers use electric motors rather than hydraulic models because they respond more quickly.

DR. ALTAF-UR RAHMAN AND HIS "RHINO"
"It is important to learn the various ways of controlling a motor's speed and torque," Rahman said, "because some industrial operations require a very fine touch. Students must also be able to determine the maximum output a motor can generate and recognize other characteristics."

Students aren't the only ones excited by the introduction of robotics at SVSC. "Faculty in the school of Science, Engineering and Technology raised the question of offering a separate course on robotics as early as next semester," Rahman said. "We had a gentleman from Saginaw Steering Gear who would be getting involved with such a course.

"The problem is that we don't have many units that could be operated at the same time. We have the computers, but only one robot. The total cost for a system is about $2,800," Rahman said.

Even though the robotics program is in its early stages at SVSC, Rahman feels it will prepare people for high-technology jobs. "Students are getting hard, practical experience in the basics of robotics and programming. If Michigan wants to develop more high-tech industry, these people are going to be needed."

The robot has been at SVSC about two months, Rahman said, but added that it hasn't been given a nickname. "You're welcome to name it," he added with a smile.

THANKSGIVING HOLIDAY BREAK COMING

In observance of Thanksgiving, SVSC offices will be closed next Thursday and Friday, November 25 and 26. Operations will resume the following Monday, November 22. The extra long weekend should provide ample opportunity for reunions with family and friends, or just to relax and finish those projects you've been postponing.

Publication of the "Interior" will be adjusted during the vacation schedule. The next issue will be distributed Tuesday, November 23. Following Thanksgiving break, printing of the "Interior" will resume on Tuesday, December 7. There will be no issue for November 30. Please keep this in mind if you have news items you'd like published. Copy deadline is noon on the Friday preceding distribution.

FORUMS EXAMINE R.O.T.C. PROPOSAL

A proposal to adopt a Reserve Officer Training Corps (ROTC) program at SVSC is being studied by the curriculum committee, and two forums were held recently to allow open discussion of related issues. The program would add six military science courses to listings in the political science department.

The proposal, originally submitted last winter semester, was tabled so all aspects could be fully examined. Concerned parties were invited to present arguments for or against acceptance of the program.

At forums conducted by Vice President Robert S. P. Yien on November 3 and 11, academic freedom was claimed by both proponents and opponents. Those favoring ROTC felt the opportunity should be available to interested students. Others believed that any program which teaches military science should be balanced by implementation of a peace curriculum, if academic freedom of choice is to be served.

As presently structured, the proposed ROTC curriculum would consist of six courses in military science. Four of these would be taught on the SVSC campus by Army instructors, with the remaining two to be summer camp experiences. Up to 16 hours of academic credit could be earned, but in most cases would apply only as general elective credit. The program would be entirely voluntary, and would not affect students majoring or minoring in political science who did not elect to participate in ROTC.

Dr. Yien pointed out that the curriculum committee is expected to act on the proposal in January or February of 1983. "If the committee recommends approval, the proposal will be submitted to the faculty for a vote," Yien said. "Ratification requires approval by the majority of those voting. If the faculty passes the proposal, the administration has two weeks to accept or veto it." He added that six SVSC students presently commute to C.M.U. to participate in ROTC classes. "ROTC is offered at 11 of Michigan's state-supported colleges," Yien concluded.

Interested persons can obtain a copy of the proposal or more information about ROTC by phoning Yien's office at ext. 4296.
**THIS WEEK AT SVSC**

Nov. 16 ... "VanTuyle: Works in Fibre"
Nov. 17 ... French film at Doan Center
Nov. 18 ... Pottery Show and Sale
Nov. 19 ... Valley Film Society meets
Nov. 20 ... International Dinner
Nov. 20-21 Chess Tournament

See monthly calendar or call Information Services for times and details.

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**LIBRARY/LEARNING RESOURCES SEeks USER COOPERATION**

According to Audio-Visual Technician Kirker Kranz, cooperation is needed to equitably share audio-visual equipment available through the library. Here's how he describes the situation:

"It's cold, raining. You have a movie to show and couldn't book a room in Wickes Hall. Using the key from the circulation desk, you go to the storage closet near your classroom. But there's no projector; someone took the last one without informing desk personnel. Now your only option is to secure a machine from the library in Wickes, while your class waits. Had your colleague been more considerate, you'd have been spared this waste of time and energy."

Kranz notes the scene is not an uncommon occurrence. He adds that all equipment is subject to the same type of misuse, and that many departments have keys to storage closets, thus making it difficult to control supply inventory. "If conditions remain unchanged, we may be forced to return to our original system where everything was stored at the library circulation desk," he states.

Kranz is also asking for cooperation in reporting equipment which needs repair. Such items should be reported to the library so they can be serviced, he says. "On the SVSC campus communication is the key to cooperation. We must cooperate to stretch our limited resources across a widening need," he concludes.

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**CAMPUS AND COMMUNITY**

--Visiting scholars from the People's Republic of China have published several research papers in recent months, according to Dr. Frank Chen, professor of physics, who is supervising their work. A paper titled "Diffraction Limited Recording Scheme in Astigmatic Rainbow Holography" appeared in the May issue of "Optics Letters." A trio of papers describing work by the three visiting professors was presented in October at the annual meeting of the Optical Society of America. And work on "360° Astigmatic Rainbow Hologram" co-authored by Dr. Chen and Ming-Yo Chen has been submitted to the International Society of Photo-optics Instrumentation Symposium scheduled for April, 1983 in Switzerland.

--An exam grading program is now available for faculty members wishing to take advantage of this service. Those who have questions about the program should contact Computer Services at ext. 4224.

--Over 300 students from six area high schools attended SVSC's 7th annual Foreign Language Day last Wednesday. Activities stressed the importance of foreign languages for international relations and commerce. Students competed in songs, dances and skits of their own creation.

--The Great Lakes Computer Expo '82 was a resounding success. According to Don Seidel, assistant director of computer services at SVSC and publicity chairman for the Expo, the only problem was too much of a good thing. Over 9,000 people attended on opening day, and nearly as many on Wednesday. It required a great deal of planning and cooperation to keep traffic moving smoothly, he said.

--The newly-formed Polish Club at SVSC sponsored a panel discussion last Wednesday. Titled "Solidarity Is Outlawed: What Next?," the panel featured Dr. Cezary Mendelius, acting director of the Polish Institute; Casimer Hozer, Polish American Congress of Saginaw; and moderator Dr. John Willertz, professor of history. Dr. Mendelius noted that even if Solidarity is never tolerated again, the ideals and hopes it represents cannot be wiped out.
SPORTS REPORT

In football action, SVSC senior Dan King set school and Great Lakes Conference records by returning eight kickoffs for 241 yards against Grand Valley last Saturday. King's marks established new standards in both categories and also gave him the season kickoff return marks at SVSC with 25 returns for 517 yards and a 20.7 average. The Cardinals couldn't stop the GVSC offense, however, which rolled up 501 yards on the way to a 53-7 victory.

On the lanes, the Cardinals regained sole possession of first place in the Michigan Intercollegiate Bowling Conference with a sweep of the Wolverines last Sunday. SVSC leads Michigan State University in the MLBC standings by four games. Senior Ron Bettin's 621 series topped the Cardinals.

The Great Lakes Conference volleyball tournament at Big Rapids was won by host school Ferris State.

SVSC wrestlers knew they faced a hard test in the season opener when they took on the big schools last Saturday. The Cards finished in the cellar at the Biggie Munn Invitational at Michigan State University in a field of tough competition. Seventh place finishes by 118-pounder Darrell Burchfield and 126-pounder Craig Gavette gave the Cardinals 22 points. The Spartans won the tournament with 156 1/2 points.

Cardinal basketball opens this weekend with the "Tip Off" Tournament at Spring Arbor College. SVSC will play Friday night against Purdue-Calumet at 6:00 p.m. The winner will play the winner of the Spring Arbor vs. Taylor University game in a Saturday afternoon contest.

Coach Doug Hansen will take his harriers to Wisconsin for the NAIA Cross Country nationals at the University of Wisconsin - Parkside this Saturday. The Cardinals will try to break out a a "rut" that has seen five near misses for the national championship. After three consecutive third place finishes, SVSC has finished runner up each of the last two seasons.