

Electronics lab to provide practical experience

By Jim Anderson

A \$1 million electronics lab is nearing completion on the third floor of the Nebraska Engineering Center, said Grant Myers, associate professor in the electrical engineering department.

When fully operational in about a year, the Solid State Device and Integrated Circuits Laboratory will provide students with practical experience in all phases of electronic circuit production, as well as aid them in finding better jobs on graduation, Myers said.

Myers, who is supervising the lab's completion, has been building the lab in his spare time for the past seven years with the help of work-study students, UNL's machine shop and equipment donated from private industry and purchased with grants, he said.

The lab's most recent acquisition was 1½ tractor trailer loads of equipment donated by Tektronix, Rockwell Inter-

national and Hewlett-Packard corporations, he said.

Equipment stored

Several pieces of equipment are being stored in the basement of the engineering center awaiting the installation of vents and wiring to increase the lab's voltage before it becomes operational.

The venting and wiring, as well as related work that has to be done, should cost about \$18,000, he said. The university has donated \$29,000 during the past seven years and has matched a National Science Foundation grant of \$18,000.

The additional \$18,000 is about the only expense so far that should be affected by state budget cuts, he said. Nonetheless, Myers expects the lab to be completed in about a year.

UNL's lab is divided into two main areas, a darkroom and a main processing area.

Circuit patterns, or masks, are pro-

duced and photographically reduced in the darkroom. From the lab's darkroom, patterns then go to the main processing area where they are transferred onto silicon wafers. Designs then are etched onto the wafers, and finally the circuits are produced and the wafers cut into chips.

Mass-production of electronic circuits in this way has grown into a multimillion-dollar industry.

Mask generator needed

The only piece of equipment the darkroom lacks, Myers said, is a mask generator, which is capable of producing more complex circuit designs such as those in calculators and computer games. Until one is obtained, the lab can produce less complex circuits — circuits with only a few transistors or diodes.

A mask generator is expensive, costing about \$200,000, he said. Because the device is so expensive, as well as versatile

and fairly resistant to becoming outdated, companies are less likely to give them away, he said.

Often, companies donate pieces of equipment that become less valuable for high volume production, and university laboratories welcome such equipment because they don't want the capacity to produce large numbers of components, he said.

Several people and agencies are looking across the country for a mask generator, he said. Myers expects to have one in a little more than a year, he said.

Private industry is relying more and more on university laboratories to do research and to help solve its problems with advanced electronic circuitry, he said. As quality and competition from foreign companies increases, American companies come under pressure to manufacture products of higher and higher quality.

Shorts

Lincoln Right to Life is having its monthly meeting Dec. 2 at 7:30 p.m. at Christ Lutheran Church, 4325 Sumner St.

The Lincoln Transportation System has announced a change in departure times for the Big Red express buses to the NU-OU game. On Friday the buses will make three trips from the Goodyear plant and Holmes Park express lots.

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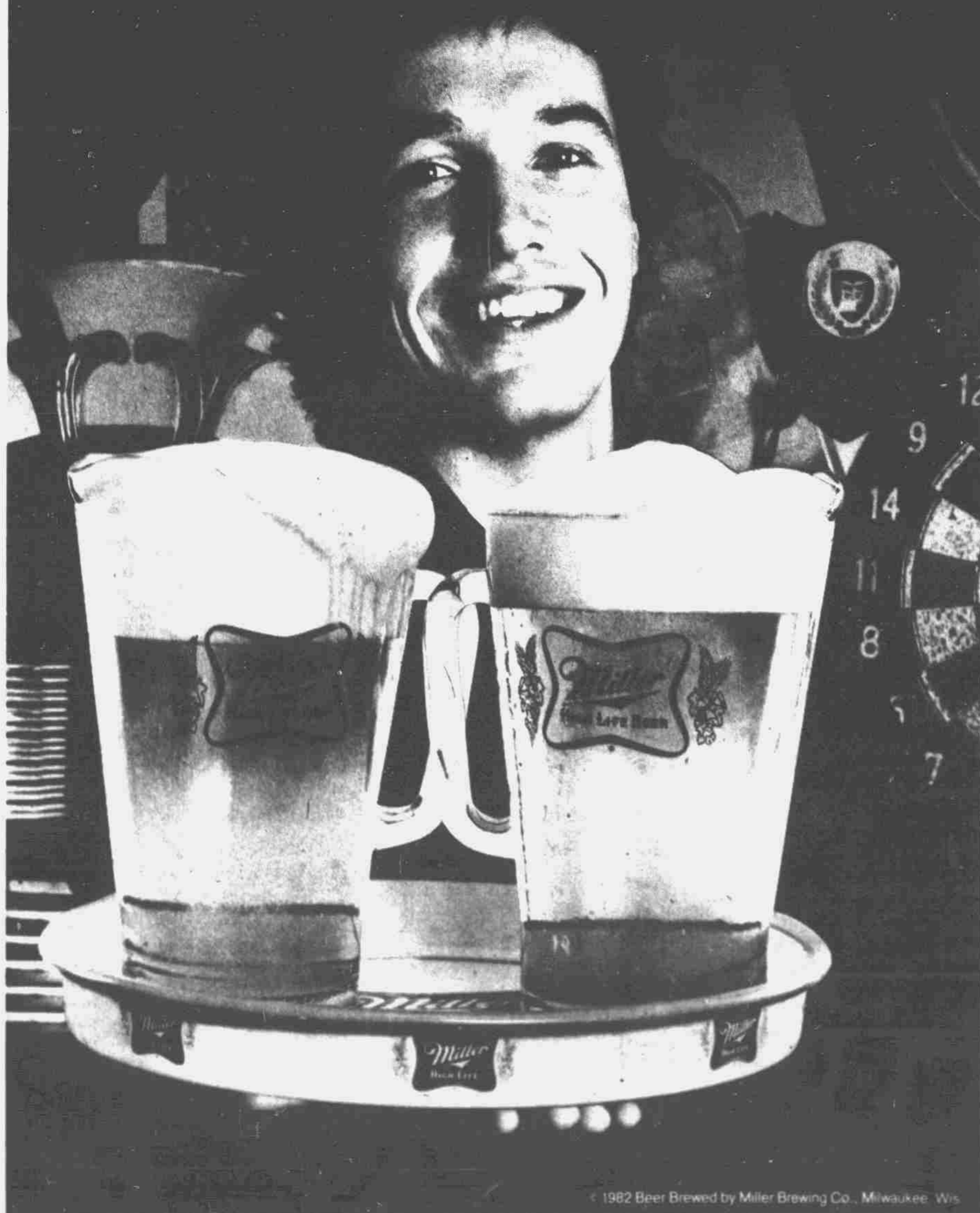
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