

Learning new math skills leads to better jobs in marketplace

BY TIM RICHARD
STAFF WRITER

Whether they love it or not, more students are taking math than any other subject area at Oakland Community College.

In part, says math instructor Jon Lundgren, it's because new hand-held computers "have thrown a lot of drudgery out of computations. It no longer takes sheer, brute force to draw a graph."

In part it's because many university students are using summer breaks to take math in OCC's smaller classes; and many people with bachelor's degrees are shoring up their job skills with math courses.

"It's an exciting time to be teaching math and science, and working with new ways to integrate it into the curriculum," said Lundgren, a West Bloomfield resident who has been on faculty since the two-year college was founded in the mid-1960s.

"It used to be that a (four-year) liberal arts degree was very salable; you didn't need a math background," he said. Today it's needed in business — his class on the Royal Oak Campus last week worked on calculating the marginal cost of producing one more unit of a product — as well as in technical fields and economics.

"Of all the disciplines, math generates the greatest amount of credit hours. We (OCC faculty) are here to teach. And we have tutoring labs," he said.

Ten years ago a classroom visitor wouldn't have seen students holding TI-82 portable graphic calculators (their surfaces are the size of a dollar bill) or an instructor working so fast.

Lundgren showed a Math 171 (analytic geometry and calculus) class how to take a formula like $Y = (X+1)^2$ and convert it into a U-shaped line on a graph in seconds. This old-timer needed several minutes to write down values of X and draw the curve by hand to get the same

result.

"This is pioneering technology — 15 minutes versus a nanosecond," Lundgren chuckled. "That's the good thing. But you don't want it to become a crutch. I don't allow them to use a graphic calculator on part of the test."

OCC would like every math student to have a TI-82, but they are expensive to some — \$90 to \$95. "At Highland Lakes Campus, we used some technology money from the millage (approved by voters in 1995) to buy a set and loan out about 90. Students can check them out. At Highland Lakes, we require them for all algebra and trigonometry classes."

OCC course offerings also include geometry, finite math, statistics, differential equations, linear algebra and math for business and for elementary teachers.

The slide rule is obsolete. Lundgren still has one. He brings it to class to show it as kind of an antique curiosity, like an oil lamp or a quill pen.

Is there any test score evidence to show students learn more with the TI-82 that enables an instructor to teach graphical concepts far more quickly?

"We know it subjectively. We pack more information into a demonstration; we can give more examples in the same amount of time. Time is precious," he answered.

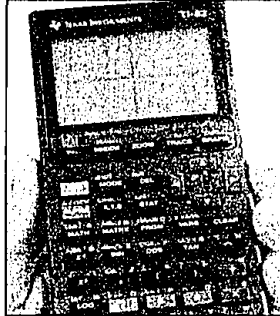
"I haven't done a study of test performance, but I'd say they definitely do better. And they can sit at home and play with it."

"We're in the process of very rapid change. We have de-emphasized computation. We emphasize higher order skills." Lundgren also emphasizes that improving math at OCC is a team effort. "Twice a year we have a meeting of the math faculty. It's formally enshrined in the faculty contract."

"There's a voluntary calculator committee. We go to conferences



STAFF PHOTO BY COLLEEN ROGERS



Calculating success: Calculators have long replaced the slide rule as the instrument of choice in solving math problems. But a new one in use on the Oakland Community College Campus helps draw graphs, says Jon Lundgren. Learning new math skills helps get a job.

of the American Mathematics Association. Each of us goes about every three or four years. About five or six years ago, I went to one in Cincinnati and was immersed for a week," he said.

And so the movement to graphic calculators started about 10 years ago and picked up steam in the last five years.

In universities, grad students use a TI-92 laptop. It does not just computations but will factor and do symbolic manipulations," he added.

Lundgren, like many of the older students in his class, per-

formed a mid-career switch, though he always has been with OCC because "it's a very nice place to work. But there are points where you want to do something different."

After starting as a political science instructor with a 1965 degree from Eastern Michigan University, he switched to counseling and then earned a specialist in math education degree in 1984 from Wayne State.

"We're still trying to sort out the curriculum. It's a scramble," he said, "because the technology changes so rapidly, but the curriculum drags."

AROUND OAKLAND UNIVERSITY

News and notes from Oakland University's Rochester Hills campus.

SCHOLARSHIP ENDOWMENT

Former Oakland University trustee David Handelman and wife Marion, residents of Bloomfield Hills, have created a major scholarship endowment to students who demonstrate leadership and academic promise. The endowment will initially provide 20 half-tuition scholarships for students with financial need.

David Handelman served as a member of the Oakland University Board of Trustees from 1979-1995, and he is a lifetime member of the President's Club. Handelman also is chairman of The Handelman Company, the largest wholesaler of music nationally, which is based in Troy.

PROGRAM REACCREDITED

The computer science program at Oakland University was re-accredited this summer by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. The university's program will be listed in public announcements among 151 computer science programs currently accredited by the board.

Oakland offers a bachelor of science in the department of computer science and engineering. OU also offers a master of science in computer science and engineering; a new master of science in software engineering; and a Ph.D. in systems engineering.

The university this year dedicated a \$43 million Science and Engineering Building.

COLLEGIATE COMMUNICATION

A class that first-year college students says helps them succeed and feel more comfortable with college life has been redesigned into a 12-week, one-credit course. Students learn about campus resources and communication skills, such as listening and information gathering.

Group presentations encourage students to get to know each

other so they will be more comfortable at OU, said Beth Talbert, director of the Office of New Student Programs.

The course also covers conflict resolution skills to help students get along with a roommate, for example. The class was offered for eight weeks last year and has been expanded to 12 weeks for an hour and 20 minutes.

INTERNATIONAL NURSING

OU's School of Nursing is serving as the headquarters for a new group focusing on a major nursing theorist, Imogene M King.

The mission is to improve nursing care and to contribute to the science of nursing through King's interactive systems, according to Christina Sietoff, assistant professor, School of Nursing, and the group's president.

The King framework identifies three groups of people: an individual, individuals in pairs or groups, and larger groups such as communities. The framework provides guidance in delivering care to these three categories.

Sietoff said the university can be contacted for information about King's work and will help like them with others familiar with King's work. The group plans to publish a newsletter and a journal. Starting in 1999, the group will host an annual education conference.

Membership is open in several categories: Charter memberships are available through Sept. 24. First year's dues are \$100, then \$40 annually. Individual annual memberships are \$40. Students and retirees can join for \$20 annually. Organizational memberships are available at \$100 and entitle the organization to two representatives.

Further information about the group is available from Sietoff at Sietoff@Oakland.edu.

A bibliography, developed by Gary Moore, is available at <http://www.nursing.oakland.edu/king/kingbib.html>.

—Compiled by Sandra Armbruster, Oakland County editor



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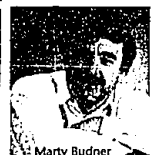
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