

Dial a problem

A program in computer-assisted instruction that will ultimately give elementary-physics students greater control over their own learning will be started this summer at the State University of New York at Stony Brook. Materials for the program will be written by professor of physics Edward D. Lambe, who believes that such instruction can provide the desired quantity of remedial work needed by beginning students.

Lambe is seeking a complete restructuring of the elementary physics course within the next five or six years with the student assuming more and more freedom of initiative. "The future format," says Lambe, "will depend on what we learn as we go along. We want to look at new learning modes that will enable the student to fit his learning to his own requirements and optimize the use he can make of live physicists. Of course we will always need a certain amount of regulatory control, such as a specified rate of time within which a student must complete his courses and examinations."

During the fall term students will try out "exemplary" homework problems developed over the summer. If these materials prove effective in classroom situations, they will be programmed into computers in the Stony Brook physics department. Students will then have ready access to several terminals when in need of homework assistance.

Within four or five years Lambe hopes to extend computer-assisted physics instruction into the Stony Brook dormitories. He would like to see terminals eventually installed in students' rooms so they can dial a program at any hour of day or night. "We do not know what effect this will have on the students," admits Lambe. "Dormitories are usually thought of as places of refuge from the classroom. This is but one of hundreds of possible instructional patterns for which we have very little

information. That is why we have to commit ourselves to a program of serious exploration of all those things that make for a more effective community of students."

Summer programs

The University of Milan, Ohio State University and the Canadian Association of Physicists have announced courses for the summer:

Elementary excitations and their interactions in solids is the theme of a NATO advanced-study institute to be held from 11 to 23 July at Cortina d'Ampezzo, Italy. Under the auspices of the University of Milan and the Italian National Research Council, the course topics will include electrons, quasi-particles, polarons, plasmons, phonons, magnons, excitations, dipolarons and phase transitions. Lecturers will be G. Baldini, G. Chiarotti, E. Fatuzzo and G. F. Nardelli of Italy; M. Balkanski and P. Nozieres of France; R. Elliot of England; W. Ludwig of Germany; P. Resibois of Belgium; and E. Burstein, D. Hone, J. Krumhansl, A. A. Maradudin, R. O. Pohl, and A. Sievers of USA. For further information write to Professor G. F. Nardelli, University of Milan, Via Celoria, 16, Italy.

A **laser-engineering** course will be presented at Ohio State from 1 to 12 Aug. (fee \$300). Designed for engineers and scientists with little or

no background in advanced physics or quantum electronics, the course will develop fundamentals of laser engineering from concepts of traveling-wave amplifiers, resonators and fields. Further information can be obtained by writing to Engineering Short Course, Ohio State University, Columbus, Ohio 43210.

Antenna and scattering theory is the topic of an Ohio State course to be given from 15 to 26 Aug. (fee \$300). This course is designed for engineers and scientists with good mathematical backgrounds and experience with antennas and electromagnetic problems. Material will be taken from unpublished work and articles in the recent literature. Tentative subjects include geometrical theory of diffraction, applications, array theory, mutual coupling in large arrays, antenna synthesis, traveling-wave antennas, statistical aspects of antenna-radiation interactions, signal-processing antenna systems, scatterer and signal statistics, scattering from rough surfaces, approximate methods of calculating radar scattering from objects, basic relations between antenna and scattering parameters, and frequency-independent antennas. Further details can be obtained from the source listed above.

Quantum optics is the subject of a summer school scheduled from 22 Aug. to 2 Sept. at the University of British Columbia in Vancouver. Sponsored by the theoretical physics division of the Canadian Association of Physicists, the course will cover theory of lasers (W. E. Lamb Jr and M. O. Scully), nonlinear optics (N. Bloembergen), quantum noise with maser applications (M. Lax and W. H. Louisell) and statistical properties of light (L. Mandel). No fees will be charged, and financial support is available for a substantial fraction of transportation, food and accommodation expenses. Applications (deadline 30 June) should be sent to Dr. R. R. Haering, Department of Physics, Simon Fraser University, Burnaby 2, B.C., Canada. □

