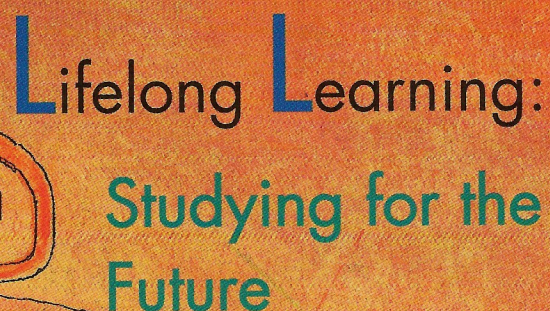
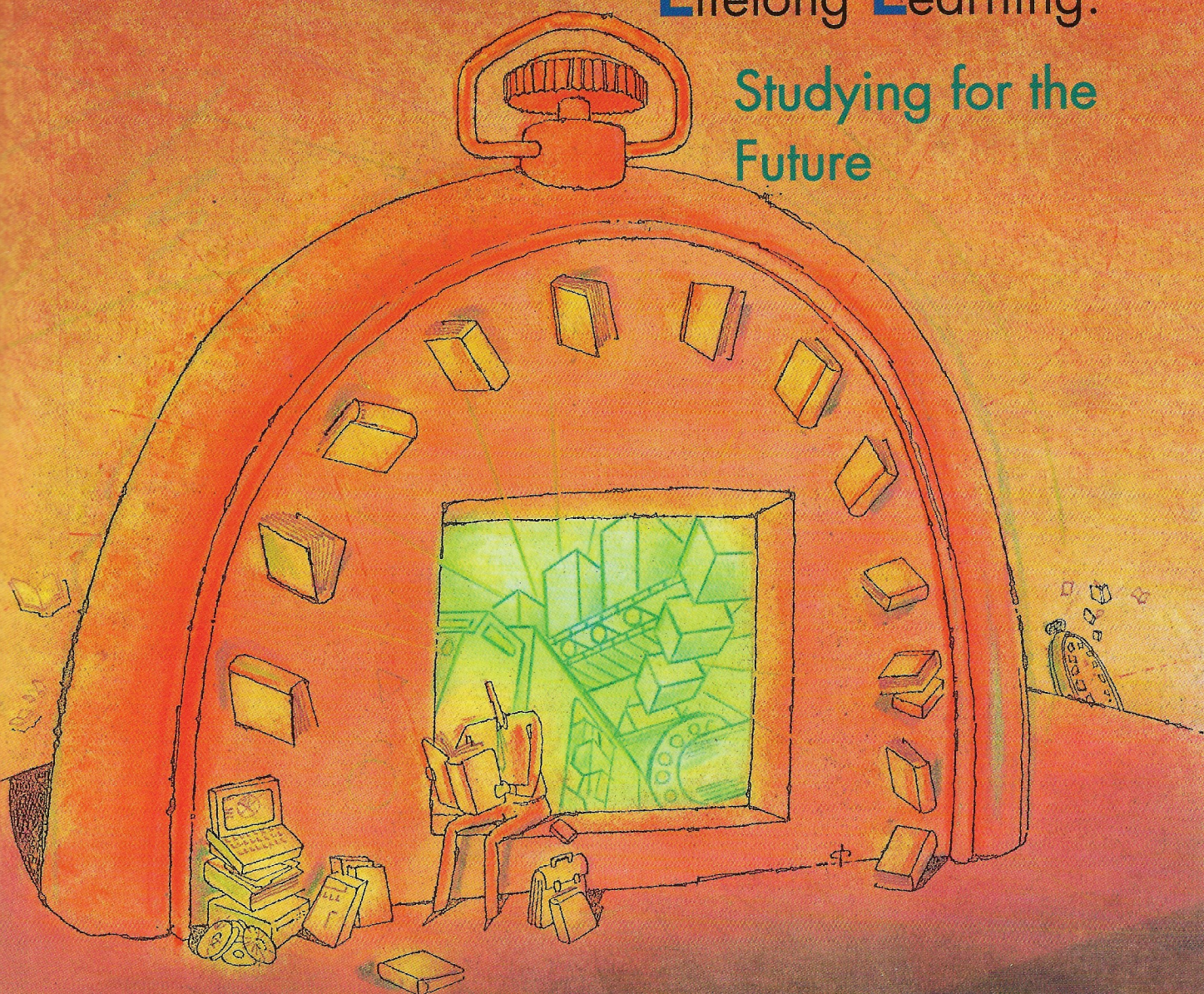


PRISM

OCTOBER 1993



Lifelong Learning: Studying for the Future



Building Teamwork

In a new introductory civil engineering course at Worcester Polytechnic Institute, the traditional lecture format will be replaced with a teaching model that is perhaps more often praised than attempted: cooperative learning. In the new course, to be offered for the first time beginning this November, students will be put to work in teams both in problem-solving activities during lecture periods and in laboratory sessions. "People learn much better working in a group environment," says Fred Hart, a WPI civil engineering professor who helped design the course. "The collaborative method asks students to help themselves."

Students will be exposed to six civil engineering sub-disciplines: structural, geotechnical, environmental, construction, surveying, and materials engineering. "We set aside the first week to acquaint them with collaborative learning and the basics of the computer," says Hart. Then each sub-discipline will be taught as a one-week unit by a different civil engineering faculty member, with the help of a graduate teaching assistant and undergraduate peer learning-assistants—junior or senior civil engineering majors who are selected by faculty and paid for their work.

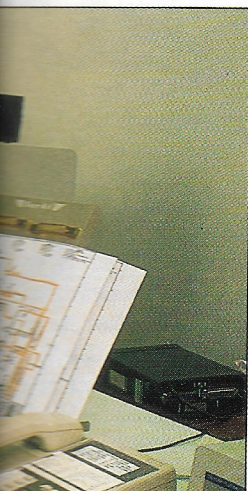
Though the course is not required this fall, the department plans to make it part of a five-course core curriculum for civil engineering majors. Eight faculty members have been involved in planning the

course, developing materials, and writing a textbook. Hart says that the "entire civil engineering department faculty will be involved at some point."

In Tuesday and Thursday laboratories led by teaching assistants, students will work in small groups, each of which will be supervised by a peer learning-assistant who will monitor group dynamics and help grade their work. Within the groups, students will be encouraged to take on "professional" roles typically found in real-world engineering groups—project manager, chief engineer, engineer, and client representative. At the end of each week, the groups will be required to give oral presentations on their results, and on Monday they will turn in a written report. Teams will remain the same for the entire course, but individual roles will rotate each week.

Though collaborative learning is not new to WPI, which has a projects-oriented engineering curriculum, says Hart, the civil engineering course and three others (in math, computer science, and biology) are institutionalizing the method's use. All four courses are receiving funding from a two-year \$500,000 "Student-Teacher Collegiality" grant from a local educational foundation. The grant was intended to help faculty, under the guidance of three principal investigators, transform their classes from the standard lecture format to participative learning through teamwork.

For more information, contact Fred Hart, (508) 831-5421.



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