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and another A&M professor making presentations in several undergraduate engineering courses.

Several department heads in the college of engineering contacted professors in their departments about the project. The professors that were interested chose an actual case related to their courses from a list of 40 cases compiled for the project.

The cases include the Chernobyl incident, the Missouri City, Texas antenna tower collapse and bribery cases.

The professors of the courses introduce the topic during the class period before the guest lecture and pass out information on the case to be presented in their class.

Rabins said there has been a positive response from students about the presentations. Students said they consider the information valuable and think more time should be devoted to the subject, he said.

One of the goals Rabins has for the project is to get the material used in more courses and have more lectures available.

"It would be painless," he said. "There would be no extra courses needed to introduce the concept."

Rabins said he hopes to complete preparations by next summer to have a collection of resource material that professors at A&M and other universities will use to introduce the concept of ethics to students.

The collection would include information about possible cases that could be used as examples as well as overheads to use in class discussion.

Rabins also said there are future plans for faculty training sessions to present the material.

"But this is far into the future," he said. "We hope to finish the first two goals first."

Dr. Charles E. Harris, the assistant head of the philosophy and humanities department, is another principal investigator of the project and guest lectures with Rabins.

Harris said philosophers often have a knowledge of ethical theories and techniques for resolving ethical problems that others might not realize exist. This knowledge can be used in the discussion and resolution of ethical issues facing engineers, he said.

There is a severe time constraint involved in the presentations, Harris said. Sometimes two or three lecture periods are devoted to the subject, but usually only one is available. This time constraint has limited what is discussed during the presentations.

"In general the presentation works better by focusing on a particular case, and not abstract principles," Harris said.

"We make points about professionalism and ethics and then elicit student response," he said. "It's very important in that amount of time to get them (the students) thinking."

Harris said he hopes students become more aware of the consequences of their actions as professionals.

"Engineers have very significant effects on the lives of other people, sometimes involving them in life or death situations," he said.

Harris used the Challenger tragedy as an example of the impact of engineering on the lives of others.

"There are many splashy cases that the average engineer won't encounter, but we're trying to let them see that their decisions have consequences," he said.

Harris said engineers possess knowledge that cannot only save lives, but destroy them.

"When you have expert knowledge, you have power," he said. "You need ethical constraints and guidelines on this power, and that's what ethical engineering is all about."

The presentations currently being made by Rabins and Harris serve a double-function of sensitizing engineering students to the issue, and serving as an experiment to draw material for the future resource materials.

Harris said ethical issues in such areas as medicine, law and business are common, but the issue of engineering ethics is fairly new.

"But engineers feel more comfortable with the issues now than they did five years ago," he said. "They haven't just become concerned, but they've heightened

their consciousness."

Harris said that in addition to sensitizing students to the issues, he hopes the project will provide students with the tools for making ethical decisions.

"Ethical decisions are hard to make, and most people aren't sure how to think about them," he said.

The main thing Harris said he hopes to see is that the resource materials will be developed and inspire other professors to develop their own presentations for their courses.

"We hope they'll take off on their own and use their own first-hand experience," he said.

In addition to their work on the project, Rabins and Harris "team teach" a course that will be cross-listed as ENGR/PHIL 482 in the spring catalog. Harris encourages students who want to learn more about ethical issues to take the course.

Dr. Walter Bradley, head of the mechanical engineering department, introduces ethics discussions in the courses he teaches.

Bradley said that in the past there was less public exposure of unethical behavior.

"Maybe we expect more now than in the past, or maybe now there is more marginal behavior," he said.

"When I was a college engineering student, cheating was almost unheard of," he said. "Today if you speak to the average student, they would probably say there is a problem with cheating,

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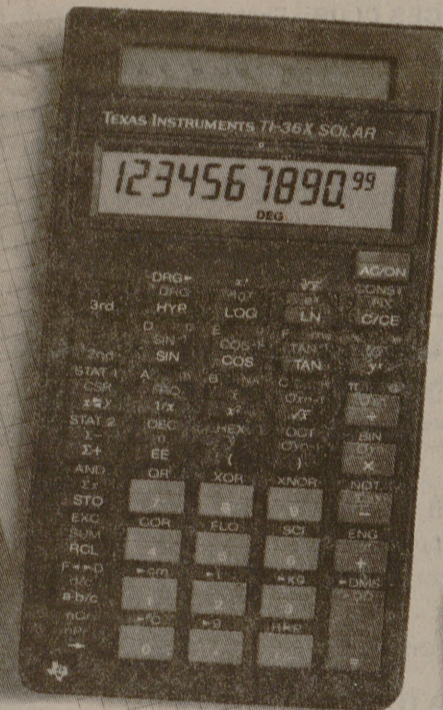
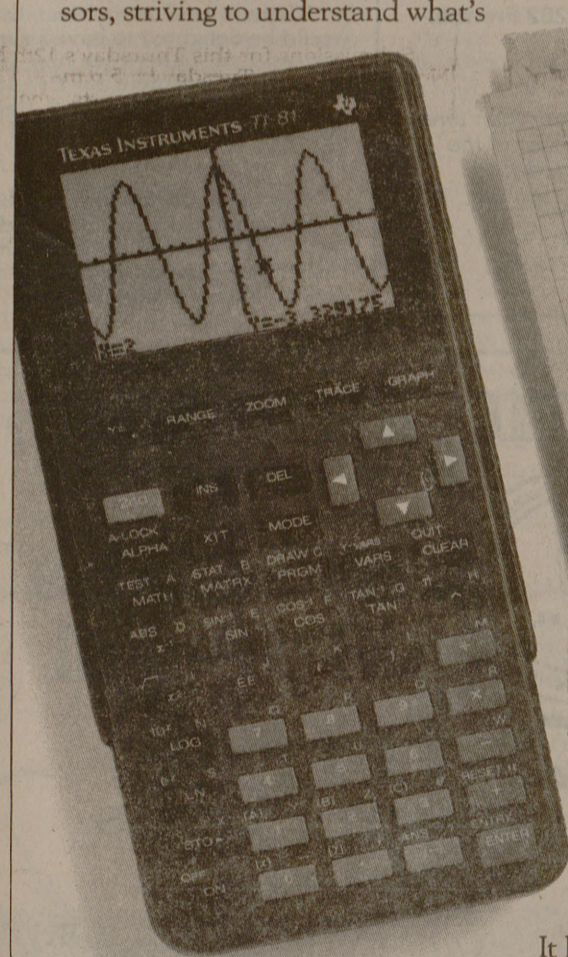
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