

## Postscript by the Editor of the Series

### What's Ahead for Technological Breadth Courses in a Honors Environment

The Honors Program at Delaware is not like many Honors Programs or Honors Colleges at other state universities, which require a certain high school grade point average for admission. At Delaware, high school students *apply* for admission into the program and their entire application is evaluated, including an additional honors specific essay. Honors students are eligible to earn a two-year General Honors Award and a four-year Honors degree. The Honors Award requires the completion of 18 Honors credits, 12 in the first year, 6 in the second and that the student maintain a 3.2 GPA at the end of second year. The Program is especially attractive to applicants in that it entails individualized advising, smaller (22 maximum) class size, committed teachers, a winter term travel option (Honors Study Abroad), and housing in an Honors dorm with students like themselves who are serious about school work.

Students who continue with additional honors courses after their second year and who maintain an *overall* 3.4 GPA, graduate from the University of Delaware with Honors, and if they write a thesis, with Distinction. Further advising and assistance is offered to upper division students seeking major scholarships such as the Rhodes, Truman, or Marshall.

At this writing, the Honors Program at Delaware is under general review which entails, in part, trying to redefine what "honors" means. Of interest to readers of this Case Example is: whether one or more courses in or about technology will continue to be offered. The fact is: the Honors Program has no direct control over courses. Faculty have to volunteer to teach either a separate discussion section of an already existing course or a stand-alone course (as was Heck's) for 22 students.

There are individual Honors courses or colloquia for students not in the Honors Program. To take one example: Civil Engineering regularly offers an honors colloquium for freshmen engineers, not limited to 22. If only 22 students are enrolled in an Honors Program course, there is a calculable loss of income to the department. This is true not just of civil engineering, but of all departments contributing an Honors course which means, departments wishing to participate in the Delaware Honors Program, must absorb the loss of a university allocation based on student FTEs. Heck's course was funded by the Dean of Engineering, out of college discretionary funds.

Looking ahead then, one issue is funding, or, better said, compensating departments that are offering Honors College courses that can be said to contribute to some overall university goal like *technological breadth* (presuming that *technological breadth*, becomes at some point in time a university goal). Another source of funds might be through an Endowment by former Honors grads to cover courses in certain fields. Another, to ask technology employers and entrepreneurs to compensate mid-career or retired professionals (like Heck) to teach.

With DuPont Corporation shedding up to 1,700 positions in Delaware in the near future, one way DuPont could contribute to technological breadth at UD would be to pay some former employees to be trained to teach in an Honors Program environment. (The University of Delaware itself has a number of senior administrators with an engineering background).

## **Conclusion**

Roland Heck's course provides a model, a tested curriculum replete with topics, assignments, a track record, and success on several dimensions. As he writes, the course was offered for six years running and would have continued had he not had to leave for medical treatment. Students -- some one-half engineers, mixing as would not often have been the case, with students aiming for other majors given the intensity of their curriculum -- were obviously available and interested.

The experience and lessons learned are by no means limited to Delaware. Any university seeking a means of achieving technological breadth could reach out to a local industrial partner to find and to compensate an instructor. Training could be done by means of filmed class room interactions, or training in an executive management type setting. The impetus will best come from inside the university, if not from trustees, then from accreditors, even parents.

Honors programs are not uniquely appropriate as a setting; but their small-class size, their flexibility of appointments and scheduling (to fit instructors' time and availability), and their commitment to writing and small-class discussion lessens the struggle of students having to get used to new and challenging subject matter. ABET, the accrediting agency for engineering education also has a role to play in providing additional points to a university Engineering Program for contributing breadth courses. Furthermore, the Commission on Higher Education, and its partner accreditation bodies could play a role by encouraging that technology education be part of a university's general education requirement.

Depending on the honors program, the university setting and available personnel, there will be problems accommodating courses about engineering in Honors Programs around the country; and not always problems of the same scope or extent. But engineers should not be put off by difficulties or objections. "Engineers," we are told, "don't find excuses, they find solutions."

Sheila Tobias, January 2016