

A new publications . . .

program was begun by your Alumni Association this fall to serve two paradoxical trends.

On the one hand, emphasis on interdisciplinary programs is resulting in growing interaction among the 14 academic divisions. During their four or five years on campus, our students likely are exposed to several different departments and divisions. For this reason, campus identification never has been stronger.

On the other hand, alumni are becoming more and more oriented professionally. On a campus of 20,000 students, being a member of the class of '70 is not nearly as important as being an engineer, or a doctor, or whatever. Some of the Association's best-attended meetings are the professional get-togethers, not the general ones.

Therefore, the *Missouri Alumnus* becomes a general campus edition in September, November-December, February, and May. Divisional editions — eight of them — are published in October, January, March-April, and June.

This month you received the edition of the division from which you were graduated. If you want another edition instead — or if you want to receive more than one — fill out the card on page 25.

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FEWER HOURS FOR ENGINEERS

The College of Engineering has reduced its bachelor degree requirements from 136 to 126 hours. We asked Dean William Kimel, 'Why?'

A. Well, let's back up a few years and look at the recommendations made in the report entitled, "ASEE GOALS OF ENGINEERING EDUCATION — EDUCATION PHASE." Written by a group representing industry, national laboratories, and the faculties of leading U.S. schools of engineering, it is a study to determine the direction engineering undergraduate education should take in the future.

In their report to the Ameri-



can Society for Engineering Education, the Goals Committee pointed out that there are more PhD's in engineering today than in all of the natural sciences, including chemistry, physics, etc. They also predicted that, by 1980, the United States will have three times as many PhD's in engineering as there are in the physical sciences.

It is primarily because of this expected increase in the need for advanced-degree engineers that the College of Engineering now thinks of the BS in engineering as a basic degree with two educational objectives: 1) To equip the graduate to meet his responsibilities as a professional engineer if he chooses to go to work as a BS engineer, and equally important 2), to prepare the BS graduate for the advanced studies that will enable him to accept the more challenging opportunities available to the MS or PhD engineer.

Q. It almost sounds as if today's engineering student needs more, rather than fewer, hours to complete his undergraduate work. True?

A. Not really. Perhaps that word reduce is misleading. You see, we just didn't arbitrarily chop 10 hours off our undergraduate curriculum. Each of our programs — agricultural, chemical, civil, electrical, industrial, mechanical and aerospace, and nuclear — has been completely redesigned. We've repackaged some of our course material, eliminating the repetition that has been allowed to accumulate over the years. We've adopted new teaching techniques and redesigned our engineering laboratory courses to reflect new equipment and the new, streamlined curricula. And we've been able to do

these things without weakening the technical strengths of our courses — in fact, we believe we have strengthened them.

Q. How do students benefit from the College's redesigned engineering curricula?

A. First, they'll benefit because we've finally put engineering on an equal credit-hours basis with competing BS programs here on the Columbia campus. As you probably know, engineering has traditionally demanded more hours for the undergraduate degree, ranging in some instances from 140 hours up to 150 hours.

Now, however, we can promise the bright, talented incoming freshman that he can complete

Dr. William R. Kimel became dean of the College of Engineering on the Columbia campus just over one year ago. Formerly professor and head of nuclear engineering at Kansas State University, he has been an engineering educator for more than 20 years.

As a working engineer, he was employed by the Goodyear Tire and Rubber Co., Akron, Ohio; Boeing Aircraft, Wichita, Kansas; Westinghouse Electric Co., Kansas City, Missouri; and the U.S. Forest Products Laboratory, Madison, Wisconsin. In 1958, he was a resident research associate at the Argonne National Laboratory, Argonne, Illinois.

Dr. Kimel earned his BS and MS degrees (mechanical engineering) at Kansas State University in 1944 and 1949, his PhD (engineering mechanics) at the University of Wisconsin in 1956.



his undergraduate work in engineering within four years, or 126 hours.

To be perfectly honest, this hasn't always been the case. Despite the listings in most engineering school catalogs, including Missouri's, the average engineering student has needed $4\frac{1}{2}$ to 5 years to earn his BS degree. One result of this, I'm sure, is that we have lost many promising students who turned from engineering as entering freshmen and chose majors in which they could earn their BS degrees in four academic years.

Another important advantage to the student is the new flexibility we've built into our engineering programs. Every student, working with his adviser, can now actually design a great deal of the program himself. He has more freedom to choose those courses he feels are best suited to his own particular interests and abilities.

Q. When this new 126-hour curriculum went into effect this September, did it apply only to entering freshmen?

A. No, our undergraduate students all were enrolled in the new program this fall. Each student's record was appraised and, during an individual interview, he was advised as to how the course work he's already taken will fit into the new 126-hour curriculum. This will result in some reduction in credit-hour requirements for every undergraduate in the College of Engineering.

Incidentally, other engineering schools are moving toward this same philosophy of undergraduate engineering education. The University of Michi-

gan recently adopted a 128-hour undergraduate engineering curriculum.

Q. Because of the mathematics, physics, and chemistry required, engineering has traditionally been considered one of the rougher courses on the Columbia campus. Will the new 126-hour curriculum make life any easier for your undergraduate students?

A. Probably not, because we haven't siphoned off any of the basic technical strengths of our departmental programs. In fact, to help our students adjust quickly and confidently to the often difficult transition from classroom to real-life engineering responsibilities, we still make sure that they get maximum exposure to the mathematics, physics, etc. they'll need to cope with today's sophisticated technologies.

We insist, too, that their programs include the humanistic-social studies courses that will help them put in proper perspective, and accept full responsibility for, their technical contributions to our increasingly complex society. And it's here, I think, where being an integral part of the nation's fourteenth largest university is paying our engineering students real educational dividends.

Only on the campus of a large university can students easily take advantage of the resources required for a broad interdisciplinary education. Here at Columbia, with the programs of four colleges and eleven schools to draw from, Mizzou engineering students can expand and enrich their education far beyond the rigid boundaries of their own disciplines.

Thanks to the redesigned 126-hour engineering curriculum, they can now do it in four academic years. □