Civil Engineering at the University

By Joseph Kornfeld, ’30

Increasing complexity of community, state and national problems of today point obviously to the need of economic and scientific analysis as an aid to their successful solution. The problems are largely engineering in nature and demand the efforts of engineers who are thoroughly-trained to work out solutions adequate enough to serve for the future as well as for the present.

Possibly no other branch of engineering affects our daily lives to a greater extent than does civil engineering. This field is especially broad for the executive type of graduate, yet in its many phases its specialization has advanced to the mature stage that the research man has an indispensable place in this profession. From an educational standpoint, the field has been divided into the following: municipal engineering, highway engineering, railroad engineering, sanitary engineering, hydraulic engineering, structural engineering, valuation engineering, surveying and geodesy.

Wide in scope and thorough in instruction, the local school of civil engineering ranks on a par with the other branches of the college of engineering. Its history has been the succession of step after step of sound developed through the employment of competent professors, the facilities of adequate laboratories and as a result of correct supervision. And with this growth has followed a parallel rise in recognition by the foremost utilities and municipalities through the Southwest as shown by their preference to employ graduates of this school.

While the school proper was not organized until 1908, the year before, George Albert Hool taught the first
work in civil engineering subjects as part of the curriculum of the then-existent school of applied science. When the work in civil, mechanical, mining and electrical engineering was organized into the present college of engineering in 1908 under the able leadership of Dean J. H. Felgar, the school of civil engineering was recognized as such. Hool was succeeded in 1909 by Frank W. Chappell.

In 1910, the faculty of this school was increased to include Herbert Bancroft Dwight and J. H. Felgar. James Irwin Tucker was named director in 1913.

F. BROOKES, the present director, succeeded Tucker in the fall of 1919. At present, five men are taxed to capacity to teach the work in the ever-widening field of civil engineering in the college of engineering. In the selection of instructors, effort has been made to obtain teachers of satisfactory scholastic background, successful professional experience and suitable personal qualifications. From an administrator's position, it is easy to see that this constitutes a problem within itself as it means that the educational institution has to go into the open market and compete with the commercial concerns in its efforts to obtain the desired talent.

The present faculty of the school of civil engineering consists of the following: Prof. J. F. Brookes, director; Prof. C. R. Sandifer; Associate Prof. N. E. Wolfard, Associate Prof. M. E. Mills; and J. R. Matlock, instructor. Graduated from leading schools and experienced in active engineering practice, these men form an instructional group well-versed in technical theory and practical procedure.

Besides the duties of director, Professor Brookes has under his immediate supervision, courses in concrete design, masonry, foundations and engineering economics. He brings to the classroom a conception and understanding of field organization, plant operation and labor management. This is backed by a number of years of experience in heavy-wall construction, dams, foundations, cofferdams, and stream regulation.

C. R. Sandifer, professor, largely devotes his time to courses in bridge design, railroad surveying, and municipal engineering. His experience has been varied, including active supervision and consultation in connection with city water supply, sanitary engineering, pavements, and reclamation.

N. E. Wolfard, associate professor, teaches subjects in the field of hydraulic and highway engineering and advanced surveying. His work and investigations cover a period of years in land surveying, highway construction and administration. During the last year, he carried on a reconnaissance for the government on portions of Oklahoma for flood control and reclamation purposes.

M. E. Mills, associate professor, is in charge of instruction in mine surveying, the estimation and design of steel and concrete buildings. Mills brings to his classes a rich fund of information acquired largely in the architectural and building field, coupled with an intimate knowledge of the economic phase of building costs.

J. R. Matlock, instructor, teaches field surveying and engineering problems. These problems are selected to stimulate the interest in general engineering, constituting an orientation course for the engineering student just beginning his study of the field.

ACILITIES at the disposal of the school of civil engineering are entirely adequate and are constantly strengthened to keep pace with the steady growth of this school. In addition to the general university library, the college of engineering maintains a separate departmental library of more than 3,000 volumes on every phase of engineering. More than fifty engineering publications are subscribed to and form an invaluable means of keeping the engineering student posted on recent advancements and new trends of the profession he is studying to enter.

Fully-equipped drafting rooms and shops are at the disposal of the student. The advanced civil engineers in design have special facilities separate from the general drafting rooms. To confirm the theoretical study of the strength of materials, laboratory tests are made of structural and building materials. Investigations are made of the behavior under load of wood, steel, cement, concrete, brick, asphaltic products, et cetera. Members of classes in plane, advanced topographic and mine surveying, each have individual instruments available for use in the demonstration of field methods.

Visits and inspection trips are made to important and representative civil engineering projects, under construction. Experienced instructors are in charge of these trips which serve as an extension of the laboratory work. The student who is prepared to perform research work is permitted to carry on investigations in connection with advanced phases of his courses. This is of great value to the competent student with initiative.

Professional and honorary scholastic societies having student branches and chapters here are: The American Society of Civil Engineers, Sigma Tau and Tau Beta Pi. The civil engineering student is encouraged to participate in the activities of such organizations, in that they increase his interest in scholastic attainment and ethical relationships.

Because of the breadth of the field of civil engineering, satisfactory business conditions of this section, and the responsive attitude of industrial and engineering concerns, graduates have little difficulty obtaining employment. It has been the case that two to three times as many requests for civil engineering graduates are received as there are men available to fill these positions.

During the present year, inquiries have been received from the following types of employers: steel concerns, telephone, gas and electric companies, oil companies, consulting engineering firms, the government, contractors, municipalities and educational institutions.

It is customary each year for state and county highway departments to employ students. Large bridge companies are usually in a position to do likewise. Industrial concerns and public utilities seek the college product for executive positions.

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