

Practitioner Involvement in an Undergraduate Engineering Program  
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## ABSTRACT

Practitioner participation in a small undergraduate Civil and Environmental Engineering (CEE) program at Christian Brothers University (CBU) is discussed. Starting from the freshmen year and ending with the capstone design course in their senior year, practitioners interact with the students, giving them professional advice, internship opportunities, and in many cases eventually offering the students their first job.

## CEE UNDERGRADUATE PROGRAM AT CBU

The CEE undergraduate program at CBU has four concentrations: structural engineering, geotechnical/ geo-environmental engineering, environmental/water resources engineering, and traffic/transportation engineering. The junior and senior students can select one of the concentration areas and take appropriate elective courses based on his/her needs. These elective courses are approved by the students' academic advisor.

## FRESHMAN YEAR

During the freshman year at Christian Brothers University (CBU), we offer a freshman course: Introduction to Civil and Environmental Engineering. In this course, practitioners are invited to give lectures on the different areas of civil engineering. The practitioners discuss job opportunities in each area of engineering and explain exactly what engineers do in each area of engineering. These lectures help the students to decide what area of concentration they want to pursue in their professional career. Students are also required to attend senior students' presentations of their senior thesis projects. Also, a panel of CBU engineering alumni visit this class to answer students' questions

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and concerns. As part of the Introduction to Civil and Environmental Engineering class, freshman students are paired with practitioners from industry, many of whom are CBU alumni. The practitioners will hopefully become mentors for freshmen students as they progress towards their degrees.

### **SOPHOMORE AND JUNIOR YEARS**

During the sophomore and junior years, we continue to invite practitioners to give lectures on topics of interest in some of our classes. We also visit local industries or civil engineering offices/laboratories at times; this also helps students' contact with the local practicing engineers. In the junior project course, practitioners act as project advisors to student groups in guiding the students in their projects.

### **SENIOR YEAR**

During the senior year, practitioners continue to advise student groups in their projects. Some of the students take the internship course and work with the practicing engineers and learn the practical aspects of civil engineering consulting practice along with learning to manage a project in real life situations. The practitioners attend some of the student presentations and evaluate the student presentations and make suggestions and comments to improve their projects.

### **LOCAL AND REGIONAL MEETINGS**

The CEE faculty occasionally accompany the students to the local American Society of Civil Engineers' (ASCE) branch monthly meetings. This gives the students an additional opportunity to interact with the local practicing engineers. The ASCE branch encourages student attendance by giving them free lunches/dinners. ASCE students have made presentations to the West Tennessee Branch regarding their performance at the regional conferences and on their student section activities. ASCE students also participate in the Tennessee Section meetings and regional meetings (Southeast Regional ASCE Student Conference & Deep South ASCE Conference) each year and compete against ASCE student members from other Tennessee and regional universities.

## BENEFITS OF PRACTITIONERS' INVOLVEMENT

Students have opportunities to work with practicing engineers and later in some cases get full-time jobs. Students get real world experience by working with the practitioners and are exposed to software not available in an academic setting. Practitioners provide valuable feedback for Institutional Effectiveness, help retention of students in the CEE program, and provide mentoring of students.

## CONCLUSIONS

Practitioner involvement has been vital to the success of the CEE program at CBU. It has had a positive impact on recruiting students. It has also resulted in increased donations to the CEE department.