1129. Where Are We Now? The Current State Of The Undergraduate BME Curriculum

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The VaNTH Engineering Research Center for Bioengineering Educational Technologies is identifying elements of the undergraduate biomedical engineering (BME) curriculum that should be common across universities. We approach the definition of a core BME curriculum in two ways: 1) analyzing courses required for graduation from the 37 ABET accredited BME programs in the US; 2) using the Delphi method to survey representatives of industry and academia to identify the concepts and courses that are most relevant to the futures of graduating biomedical engineers. While no two undergraduate programs are identical, our analysis revealed that nine distinct courses are required at ~75% of the accredited programs. These courses include physiology, mechanics, biology, circuit analysis, computing, instrumentation, materials, statistics, and transport; in addition, all but two universities have identifiable design courses. The Delphi study data suggest that the core curriculum should also contain organic chemistry, thermodynamics, and signal analysis. Based upon these data, and the average credit hours dedicated to these courses by the accredited programs, we have comprised a 128 credit hour undergraduate curriculum which meets ABET requirements and still provides flexibility for programs to emphasize specific areas or tracks within BME. Using feedback from the Delphi study, we also make recommendations as to which concepts should be prioritized within these courses.