

Educational Objectives and Expected Outcomes

Civil Engineering at Kansas State University

The following educational objectives and expected outcomes have been developed and adopted by the faculty, students, and advisory council of the K-State Department of Civil Engineering. The educational objectives describe expected accomplishments of our graduates during their first few years

in the profession. The expected outcomes describe what our students should know and be able to do upon graduation. These objectives and outcomes are directed toward the further development and continuous improvement of our undergraduate educational program.

Objective 1: Students will become technically competent for the practice of civil engineering.

Outcome 1.1 Each will demonstrate an understanding of mathematics, science, and engineering principles necessary to solve problems in four major areas of civil engineering.

Outcome 1.2 Each will demonstrate the ability to design engineering systems, components, and/or processes in four civil engineering subject areas.

Outcome 1.3 Each will participate in a major integrated (capstone) civil engineering design experience.

Outcome 1.4 Each will demonstrate the ability to use modern computational, laboratory, and field techniques/tools used in civil engineering.

Outcome 1.5 Each will demonstrate the ability to design and conduct experiments, and analyze and interpret engineering data.

Objective 2: Students will become knowledgeable of the natural and social context of the practice of civil engineering.

Outcome 2.1 Each will demonstrate an understanding of significant historical developments and contemporary issues in civil engineering.

Outcome 2.2 Each will demonstrate an understanding of the local and global societal context he or she will live and work in, including social, economic, environmental, and public safety aspects of civil engineering projects.

Outcome 2.3 Each will demonstrate an understanding of business, economics, project management, and other related issues of civil engineering.

Outcome 2.4 Each will be able to function within multi-disciplinary teams.

Objective 3: Students will become critical thinkers and effective communicators.

Outcome 3.1 Each will demonstrate the ability to extract and synthesize information from a variety of technical resources.

Outcome 3.2 Each will demonstrate the ability to analyze, formulate, and evaluate alternative approaches to solving problems.

Outcome 3.3 Each will demonstrate the ability to write quality technical reports.

Outcome 3.4 Each will demonstrate the ability to create and deliver quality oral presentations.

Objective 4: Students will become engineers with high standards of professional ethics.

Outcome 4.1 Each will demonstrate an understanding of professional and ethical responsibilities of the practice of civil engineering.

Outcome 4.2 Each will recognize the importance of professional licensure and the need for lifelong learning and continuing education.