

Transportation Engineering Competition Rules (V1.0)

Student Host Champion: TBD

Faculty Host Champion: HM Abdul Aziz (azizhusain@ksu.edu)



Mid-American Ingenuity

Background

As a part of the 2023 ASCE Mid-America Student Symposium, the Kansas State ASCE Student Chapter intends to host a Transportation Engineering competition. The competition will closely mimic other transportation engineering competition hosted at other ASCE Student Symposia across the nation with a specific focus on safe, efficient multi-modal transportation systems.

Objective

The American Society of Civil Engineers (ASCE) Transportation Engineering Competition encourages students to gain experience in improving an existing urban intersection. The problem will be presented before the teams during the competition with a short question and answer session. To solve the specified problem, each team will apply the fundamentals of traffic engineering, highway safety, capacity analysis, and bike/pedestrian facility design.

Evaluation

1. A panel of judges will evaluate the proposed solution(s) based on the completeness and correctness of the materials and presentation.
2. Each team will get two hours to prepare a proposed solution, organize submittal materials, and prepare a 6-minute presentation.
3. Team presentations will be delivered to a panel of judges, followed by questions from the judges.

Design Report

Each team is required to submit a design report detailing the overall project and must include a description of the design process, final design, treatment principles utilized, environmental impacts, cost analysis, and tables of material and operational costs.

Competition Rules

- I. Only one team per school is allowed consisting of up to four undergraduate students.
- II. Teams CANNOT solicit help from individuals not participating as team members during the competition. Each team will work in a separate meeting room.
- III. Each team works to solve the same problem during the competition with identical START and END times.
- IV. Drawings and calculations will need to be done in U.S. customary units.

- V. All designs will need to be drawn by hand. Use of CAD software will not be allowed.
- VI. Handheld calculators, manual drafting equipment, and drawing scales are permitted.
- VII. Access to the internet is only allowed to explore the references listed below [VIII-(a) through (g)]
- VIII. Teams can use/consult the following references during the competition, and it is highly recommended that teams review these references prior to the competition:
 - a) Any civil engineering textbook(s),
 - b) Current edition of MUTCD (www.mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm),
 - c) Crash Modification Factors Clearinghouse (<http://www.cmfclearinghouse.org/>),
 - d) NACTO Design Guide (<https://nacto.org/program/design-guidance/>),
 - e) Bicycle Facility Design Guide (<https://nacto.org/references/aashto-guide-for-the-development-of-bicycle-facilities-2012/>),
 - f) Texas Transportation Institute Intersection Design Guide (<http://tti.tamu.edu/documents/0-4365-P2Combined.pdf>),
 - g) Any State DOT-specific design guide (please refer to the design guide/manual when presenting the solution).

Scoring Criteria Breakdown

The total score is obtained using two equal components.

Design Report – 100 points

Professionalism must be taken seriously to be credible as future engineers. Teams that submit a logical, cohesive technical report with all required sections and content with zero grammatical or spelling errors will be awarded the full 100 points. Teams that fail to submit a design report on time will be assessed a penalty.

Oral Presentation – 100 points

An oral presentation (maximum of 6 minutes) is required for each participating team. All technical presentations must be conducted in a professional manner. Oral presentations must be presented in English. Presentation order will be randomly selected before the competition begins and will be provided no later than the time of on-site registration. The oral presentations will be open to the public for viewing, but not by other participating teams. An additional four-minute period is to be permitted for judges' questions immediately following the oral presentation. Only the judges will be allowed to ask questions.