

Consulting Engineering

CATEGORY OBJECTIVE

Assess competitors' ability to construct and promote an engineering solution to potential customers.

REGISTRATION CRITERIA

Four (4) competitors per team.

COMPETITION FACILITIES

- 1 presentation room (with digital projector)
- 1 workroom per team

COMPETITION PERSONNEL

- 3 or more judges/clients - The judges play a dual role as potential clients who must select the best solution for their type of business according to the financial, technological, and/or environmental criteria established during the presentation of the problem.
- 1 timekeeper: The timekeeper is responsible for ensuring that the competitors stay within the time allotted. The timekeeper shall keep track of the time during
 - the question period, solution development, and presentations.
- 1 official: The official presents the problem to the competitors and judges; only the official may respond to questions regarding rules and procedure. The official works with the panel to clarify the problem but does not take part in judging the teams.
- 2-3 volunteers: Volunteers carry out various support tasks.

EQUIPMENT REQUIRED

- Basic Internet access
- Related reference documents, if any
- 1 USB key (to store presentations)
- Software: Any software brought by students is legal unless otherwise stated by the competition official

PROCEDURE

1. Presentation of Theme

At least fourteen days (336 hours) prior to the competition, the theme to be addressed during the competition will be announced to the competitors, judges and public. Moreover, competitors will receive a list of all required or optional equipment, software, or tools.

2. Presentation of Problem

The detailed problem must be presented to all competitors and judges on Friday evening. The category official must provide detailed explanations of what is expected from the competitors, both orally and in writing.

3. Question Period

The competitors then have 30 minutes to ask the category official any questions they may have. Time used for both the posing and answering of questions will be accounted for in the 30 minutes. Time used by judges to pose questions and time used by the official to answer the judges' questions will not be accounted for in the 30 minutes allotted.

4. Development of the Solution

The teams then have at least four hours to develop their solution, produce all required deliverables, and prepare their presentations for the judges/clients. All the deliverables as well as any other document, PowerPoint presentation, drawing, and the like, for use during the presentation to the judges/clients must be submitted to the official before the expiry of the allotted time. Competitors may finish before the end of the allotted time.

5. Rest Period

While not mandatory, it is recommended that competitors be allowed a minimum of six hours to unwind, take a shower, and change into clothes appropriate for giving their presentations. The presentations to the judges/clients will be scheduled on Saturday.

6. Presentation to the Judges/Clients

Competitors have 15 minutes to present their solution, their deliverables, and to convince the judges/clients that their solution is optimal. The judges/clients then have a minimum of five minutes to ask presenters questions. Nevertheless, it is not unusual for the judges/clients to ask questions during the team presentation for clarification or more details. The Timekeeper should stop the watch during such brief interruptions.

TIMEKEEPING

- Time is halted when a judge asks a question when the problem is being presented.
- Time is halted when an official answers a question when the problem is being presented.
- Time is started when all the teams have reached their work areas during development of the solution.
- The remaining time must be announced at 1 hour, 30 minutes, and 10 minutes before the end of the allotted time.
- Time is halted when a judge answers a question during the presentation to the judges/clients.
- Time is halted when a team member answers a question asked by a judge during the presentation to the judges.
- The remaining time must be announced 10 minutes, 5 minutes, and 1 minute before the end of the allotted time for the presentation to the judges/clients.
- A visual countdown must be given during the last 30 seconds of the presentation to the judges.
- The question period after the presentation to the judges is not included in the allotted time.

TEAM ORDER

- Team order shall be determined randomly.
- Team order shall be disclosed to the teams prior to the first presentation.

RESPONSE TO QUESTIONS

- Only the category official may answer questions.
- During the presentation of the problem, the official shall answer orally and write down the answers provided.
- During the solution-development phase, only questions related to deliverable content shall be answered. No answers shall be provided in response to questions about the problem that might lead to the development of a new approach or that might invalidate a solution.
- During the solution-development phase, answers to questions shall be provided in writing to all teams at the same time. A certain amount of time (e.g. 15 minutes) may be allowed to elapse or a significant number of questions accumulated before responses are provided. A copy of the responses must be provided to the judges prior to the presentations.

ASSESSMENT AND JUDGES

- The judges must include individuals with expertise in the area as well as specialists in communications, sales and/or consulting.
- The panel must have a minimum of three judges.
- The assessment shall be carried out in an audience's presence.
- Feedback forms, from the judges, shall be provided to each team prior to the closing of the competition.

TEAM SUPPORT

Teams are authorized to bring any equipment or hardware, including:

- USB keys
- Diskettes
- Laptops
- CD-ROMs
- Reference books
- Teams are not allowed to use any work done by persons other than their own team members. For example, outsourcing of any work will be prohibited.

TOPIC

- The topic may touch on one or more areas of engineering. It should not, however, be limited to technical considerations. While Consulting Engineering assesses technical skill, it focuses on the competitors' capacity to optimize the team's solution on the economic, ecological, and social levels (or according to other requirements specified by the client).
- Topics must be fully documented. All necessary documentation must be provided to competitors and judges when the problem is presented. All desired restrictions will also be noted.
- The topic should not be restrictive and will leave room for imagination. The winning solution may not necessarily be the most technically sound solution.
- Consulting Engineering is a very broad field. Consulting engineers can work on company restructuring, systems implementation, production optimization, and general design. That being said, the scenario will be

realistic. The winning team will be the one that gains the most client buy-in by offering novel ideas or analyzing the problem from a new standpoint.

SUMMARY OF ASSESSMENT SCALE

Report	25%
<i>Presentation clarity, appearance, and professionalism</i>	<i>10%</i>
<i>Compliance with expectations</i>	<i>15%</i>
Solution	40%
<i>Technical innovation</i>	<i>10%</i>
<i>Quality of the solution</i>	<i>15%</i>
<i>Environmental, social, and economic analysis</i>	<i>15%</i>
Presentation	35%
<i>Quality of visual aids</i>	<i>10%</i>
<i>Speaker quality</i>	<i>15%</i>
<i>Correspondence to report</i>	<i>5%</i>
<i>Compliance with time</i>	<i>5%</i>

