

2010 West Point Bridge Design Contest

OFFICIAL RULES

1. Eligibility

- 1.1 Anyone may participate in the West Point Bridge Design Contest; however, only eligible contestants may advance beyond the Qualifying Round and compete for prizes.
- 1.2 Eligible contestants include the following:
 - (1) Students, age 13 through grade 12, who are currently enrolled in middle schools, junior high schools, and high schools in the United States.
 - (2) Students, age 13 through grade 12, who are legally home schooled in the United States.
 - (3) All U.S. citizens, age 13 through grade 12, who are attending school outside of the United States or are home-schooled outside of the United States.
- 1.3 To be eligible, a contestant must be at least 13 years old *at the time of registration*.
- 1.4 To be eligible, a contestant cannot have graduated from high school, as of the time of registration. A student who registers while attending high school and then subsequently graduates prior to the end of the contest retains his or her eligibility. In such cases, the student must be prepared to document that he or she was, in fact, enrolled in high school at the time of registration.
- 1.5 Any contestant who is not eligible may register and compete in the Open Competition.

2. Teams

- 2.1 Students may compete individually or in teams of two members. Competing in teams of two is strongly encouraged.

Note: Throughout these rules, the word team refers to one or two students who have identified themselves as a team during the contest registration process.

- 2.2 A team of two students is considered eligible only if *both* members of the team are eligible. (See the eligibility requirements above.)
- 2.3 To be eligible for the Semi-Final and Final Rounds of the contest, each team member must be available to participate at the times and places specified in Rules 6 and 7 below. If one member of a two-person team is unavailable for either the Semi-Final or Final Round (or if one member loses eligibility for any other reason), then that member is disqualified. The remaining eligible team

member may continue in the contest as a one-person team but may not add a new team member to an existing team.

- 2.4 During the Qualifying Round, each contestant may register as a member of *only one team*, except under the following circumstances:
- (1) If an individual enters the contest alone but subsequently decides to work with a teammate, he or she may form a new two-member team.
 - (2) If a two-person team enters the contest but one member subsequently drops out, becomes ineligible, or joins another team, the remaining individual may register a new team and continue in the contest.
 - (3) If the members of a team forget their team name or password, they may register again under a new team name.
 - (4) If a 12 year old contestant will turn 13 prior to the end of the Qualifying Round, then that contestant may initially register and compete in the Open Competition, and then register a new team on or after his or her 13th birthday, in order to compete as an eligible contestant.

During the Qualifying Round, if one individual is a member of two or more different teams that are ranked in the top 30 of any contest zone, then only the highest-ranked team (i.e., the team with the lowest cost design) will be allowed to continue. All others will be disqualified.

3. Registration

- 3.1 Registration for the West Point Bridge Design Contest will begin at the time and date specified on the contest website at <http://bridgecontest.usma.edu/schedule.htm>.
- 3.2 To participate in the contest, a team must register via the WPBDC website. As part of the registration process, the contestant will be asked to (1) validate the eligibility of each team member, (2) provide a team name and password, (3) provide an e-mail address, (4) provide contact information for each member of the team, and (5) designate one member as Team Captain.
- 3.3 As part of the registration process, each team will be automatically assigned to one of four contest zones, based on the geographical location of the Team Captain's school.
- 3.4 Once a team has registered for the contest, the team name, the names and ages of the team members, and the assigned contest zone cannot be changed. Other information (mailing addresses, e-mail address, etc.) can be updated on subsequent log-ins.
- 3.5 No contestant may be registered in more than one zone. If a contestant registers in more than one zone, he or she will be barred from further participation in the contest, and his or her team(s) will be disqualified. If a contestant mistakenly registers in the wrong zone, he or she should request disqualification of that team before registering a new team. See Rule 3.6.
- 3.6 Any team that wishes to voluntarily disqualify itself may do so by sending an e-mail message to wpbedc1@gmail.com. The message must include the team name, the team's password, and the reason for the requested disqualification. Once a team has requested disqualification, the team members may register again under a new team name.
- 3.7 Anyone who is found to have misrepresented their age, eligibility status, contact information, or contest zone during the registration process will be barred from any further participation in the contest and will be ineligible for prizes.

- 3.8 The use of inappropriate team names is strictly forbidden. Any team that registers under an inappropriate team name will be disqualified, and the members of that team may be barred from further participation in the contest. Further guidance on what constitutes an inappropriate team name is provided on the registration web page. The Contest Committee reserves the right to determine if a given team name is inappropriate. All decisions of the Contest Committee are final.
- 3.9 To ensure the privacy of contest participants, the team name may not include the last name of any team member.
- 3.10 The use of any obscenity or other inappropriate language in a team registration (to include the team password) is strictly forbidden. Any team that uses inappropriate language in its registration will be disqualified, and the members of the may be barred from further participation in the contest. The Contest Committee reserves the right to determine if a given team name is inappropriate. All decisions of the Contest Committee are final.

4. Your Privacy

- 4.1 In developing the West Point Bridge Design Contest, we have made every effort to comply with the Children's Online Privacy Protection Act (COPPA). We strongly support the provisions of COPPA and pledge to use all personal information collected from contestants solely for contest administration and assessment.
- 4.2 As part of the online registration process, each eligible contestant will be required to provide his or her name, age, mailing address, phone number, e-mail address, school name, and school city. This information will be used only for (1) assignment of teams to contest zones, (2) verification of eligibility, (3) direct communication with contestants for the purpose of providing updates or resolving problems, and (4) notification of winners.
- 4.3 Contestants will be asked to provide information on their gender and ethnic background. This information is *optional* and is requested solely for the purpose of assessing whether the contest has been successful in reaching out to women and ethnic groups that are underrepresented in the engineering profession.
- 4.4 Because of COPPA restrictions on acquiring personal information on line, children age 12 and below are *not eligible* for this contest. Children age 12 and below can participate in the Open Category, but they will not be asked to provide any personal information on line, and they are not eligible for prizes.
- 4.5 No information collected during registration for the West Point Bridge Design Contest will be disclosed to any third parties, except for the following:
- (1) The names of the winners of the Final Round may be made public for the purpose of contest publicity.
 - (2) A number of local contests will be offered in conjunction with the West Point Bridge Design Contest. To support these local contests, we will provide the names and contact information of the top finishers to the appropriate local contest coordinator, at or near the end of the Qualifying Round. This information will be provided solely for the purpose of notifying the local contest winners.
- 4.6 Data collection for the West Point Bridge Design Contest is the responsibility of COL Stephen J. Ressler, Department of Civil & Mechanical Engineering, West Point, NY 10996; phone: (845) 938-2600; e-mail: wpbedc1@gmail.com.

5. The Qualifying Round

- 5.1 The Qualifying Round will begin at the time and date specified on the contest website at <http://bridgecontest.usma.edu/schedule.htm>.
- 5.2 A team must register before it can submit bridge designs. It is not necessary to submit a bridge design at the time of registration.
- 5.3 Once a team is registered, there is no limit to the number of entries that team may submit. No entries for the Qualifying Round will be accepted after the closing time and date, as specified at <http://bridgecontest.usma.edu/schedule.htm>.
- 5.4 All bridge designs must be created using the West Point Bridge Designer 2010 software, which will be available for download from the WPBDC website at the start of the Qualifying Round. (It is permissible to obtain the software from another source; however, the team is solely responsible for ensuring that it has obtained the correct version of the software.)
- 5.5 During the Qualifying Round, there are no restrictions whatsoever on collaboration. Teams may consult freely with teachers, contest volunteers, parents, or peers about their designs. Collaboration with others will not be allowed in the Semi-Final and Final Rounds.
- 5.6 During the Qualifying Round, each team is responsible for the security of its own design(s). Any contestant who shares his or her team's design(s) with another person or team does so at his or her own risk. Any contestant who fails to safeguard his or her team's design(s) does so at his or her own risk. A contestant who has shared or failed to safeguard a design loses all claim to "ownership" of that design or design concept. If a team shares its design and subsequently fails to qualify for the Semi-Final Round as a result, that team has no basis for complaint and no claim on a place in the Semi-Final Round.
- 5.7 At the end of the Qualifying Round, the top ten eligible teams from each contest zone will be invited to compete in the Semi-Final Round. Semi-finalists will be notified by e-mail or by phone, no later than two weeks prior to the scheduled date of the Semi-Final Round. To facilitate notification, each team is responsible for ensuring that its contest registration data includes an accurate e-mail address and phone number.
- 5.8 The Contest Committee reserves the right to invite more than 10 teams per zone to compete in the Semi-Final Round. Additional teams might be invited, for example, if a given school has two or more teams in the top 10 for its zone.

6. The Semi-Final Round

- 6.1 The Semi-Final Round will be conducted at the time and date specified on the contest website at <http://bridgecontest.usma.edu/schedule.htm>.
- 6.2 If a team is not available to compete at the designated time, it will be disqualified. Exceptions to this rule can be made for cases involving family emergencies and religious observances. Such exceptions must be requested at least 24 hours prior to the start of the Semi-Final Round. The Contest Committee reserves the right to make the final decision regarding all exceptions.
- 6.3 No later than 7 days prior to the Semi-Final Round, each team will be required to identify the location where the team will compete in the Semi-Final Round. The site must be equipped with a reliable Internet connection and a computer with *the most current version* of WPBD 2010 already installed. If two or more teams from the same school will be competing in the Semi-Final Round, the Contest Committee may direct that these teams compete at the same location.

- 6.4 No later than 7 days prior to the Semi-Final Round, each team will be required to identify an on-site monitor, who will agree to observe the team's performance during the entire three-hour Semi-Final Round and validate the team's entry. The on-site monitor may be a teacher, a school administrator, or an approved contest volunteer. The selected monitor must contact the Contest Coordinator no later than 48 hours prior to the start of the Semi-Final Round, to verify his or her willingness to participate and to confirm familiarity with the contest rules. Any team that fails to obtain an on-site monitor by this deadline will be disqualified from the contest. Teams must be willing to allow an additional external observer to monitor their performance during the Semi-Final Round. If a team refuses to allow an external observer, that team will be disqualified from the contest.
- 6.5 At the designated time and date of the Semi-Final Round, each the team will log in to the WPBDC website with a special team name (issued by the Contest Coordinator), receive a new design project for WPBD 2010, develop a new bridge design, and submit it to the contest website, using the same procedure as in the Qualifying Round.
- 6.6 During the Semi-Final Round, teams are required to do their own work. Team members may not collaborate with anyone outside of their own team, including the on-site monitor. The on-site monitor will verify that the team's design submission is entirely the product of the one or two registered team members. Unauthorized collaboration will result in immediate disqualification from the contest.
- 6.7 During the Semi-Final Round, each team will be allowed to use only one computer. The only programs that may be running on the computer are Windows, the West Point Bridge Designer 2010, and a web browser. The web browser will be used solely for uploading designs. No team is permitted to use e-mail or any other form of electronic communication during the Semi-Final Round.
- 6.8 Team members may not use any printed, written, or electronic reference materials (except for the WPBD 2010 Help file) during the Semi-Final Round. Team members may not use any previously created designs (printed or electronic) during the Semi-Final Round. Team members may take hand-written notes and may use a calculator.
- 6.9 As soon as possible after the conclusion of the Semi-Final Round and validation of the design submissions by the on-site observers, the 5 finalist teams will be identified and invited to compete in the Final Round of the contest.
- 6.10 The finalists will be the top 5 finishers in the Semi-Final Round, except that:
- (1) No more than two teams will be selected from any given zone.
 - (2) The Contest Committee reserves the right to invite more than 5 teams to compete in the Final Round.

Three alternate teams will also be named and will be invited to compete in the Final Round if one of the top five teams is unable to attend. All finalists will be notified by e-mail or phone, no later than one week following the Semi-Final Round.

7. The Final Round

- 7.1 The Final Round will be conducted on the date specified on the contest website at <http://bridgecontest.usma.edu/schedule.htm>, at the United States Military Academy, West Point, New York.

- 7.2 Only the teams selected at the end of the Semi-Final Round will participate in the Final Round. Teams must be present to compete.
- 7.3 Each team will travel with a parent or guardian to West Point, New York, for the final round of the contest. All reasonable travel and lodging expenses for the team members and one parent or guardian per team will be paid from contest funds. Each team member will be required to provide proof of identity and eligibility upon arrival at West Point.
- 7.4 During the Final Round, each team will be provided with a computer workstation consisting of a notebook computer equipped with a conventional mouse. Teams will be presented with a new design project for the West Point Bridge Designer 2010 and will be required to develop a new bridge design within a specified two-hour period.
- 7.5 During the Final Round, teams are required to do their own work. Team members may not collaborate with anyone outside of their own team. Unauthorized collaboration will result in immediate disqualification from the contest.
- 7.6 During the Final Round, the Contest Coordinator may designate one team member as Computer Operator for the team. If the Contest Coordinator chooses to designate a Computer Operator, only that team member will be permitted to manipulate the computer mouse during the round.
- 7.7 At the conclusion of the two-hour Final Round, the Contest Coordinator will check each team's score and identify the winner.

8. Judging

- 8.1 During the Qualifying and Semi-Final Rounds of the contest, an automated process will be used to check the validity of each design submitted electronically to the contest website. An entry will be judged as valid if:
 - (1) The file is a "bridge design file" created by WPBD 2010, the most recent edition of the West Point Bridge Designer;
 - (2) The design has no more than 120 members and no more than 50 joints;
 - (3) The design is not identical to any previously submitted design;
 - (4) The design is structurally adequate; i.e., it passes the WPBD load test with no member failures; and
 - (5) The design has no instances of one structural member drawn directly over the top of another.

The WPBDC website will automatically reject any design that is identical to a previously submitted design. In other words, the first team to achieve and submit a given design will obtain full, exclusive credit for it. Two designs are considered to be identical if (1) their joints are all in exactly the same positions; (2) their structural members are all in the same positions (without regard to member numbers); and (3) each member in one design uses exactly the same material, cross-section, and size as the corresponding member in the other design.
- 8.2 The submitted design must have been created entirely within the West Point Bridge Designer 2010. Any attempt to manually modify the bridge design file will result in rejection of the design and may result in disqualification of the team.
- 8.3 If a design is rejected, the submitting team will usually be notified automatically by the website. If any subsequently discovered condition causes rejection of a design or disqualification of a team,

the Contest Committee will attempt to notify the affected team(s) by e-mail. However, even if a team never receives such notification, the Contest Committee's decision to reject the design or disqualify the team will stand.

- 8.4 Once an entry is determined to be valid, its standing in the contest is determined by its cost. A lower cost results in a higher standing. In all three rounds of the contest, the lowest cost wins.
- 8.5 The cost of a design is as calculated by WPBD 2010 and the WPBDC website. These two calculations should be identical; however, in the unlikely event that the two calculations are different, the one performed by the WPBDC website will be used to determine the contest standing.
- 8.6 The load test results calculated by WPBD 2010 and the WPBDC website should be identical; however, in the unlikely event that the two calculations are different, the one performed by the WPBDC website will be used to determine whether or not the design passes the load test.
- 8.7 If two teams in the same zone submit designs that are *not identical* but that have *exactly the same cost*, the tie will be broken based upon the time of submission. The design submitted earlier will have the higher standing.

9. Technical Requirements

- 9.1 During the Qualifying and Semi-Final Rounds, each team is responsible for gaining access to the Internet and the WPBDC website. This responsibility includes providing computer equipment, a phone line or other connection, and an account with an Internet service provider. Use the most reliable access available to you. The United States Military Academy and its sponsors will not be responsible for any difficulties you encounter due to access problems or slowness in your connection to the WPBDC website.

10. General Conditions

- 10.1 All teams agree to abide by the terms of these official rules.
- 10.2 If any contestant engages in conduct judged by the WPBDC Committee to be "unsportsmanlike," then the contestant and his or her team will be permanently disqualified from the contest.
- 10.3 The decisions of the WPBDC Committee are final on all matters concerning the operation of this contest. All teams agree to be bound by the decisions of the WPBDC Committee.
- 10.4 The published contest schedule and rules are subject to change.
- 10.5 Members of winning teams grant the U.S. Military Academy and the other contest sponsors permission to use their names on line, in print, or in any other media, in connection with contest publicity.
- 10.6 By entering, participants release and hold harmless the U.S. Military Academy and the other contest sponsors, their respective directors, officers, employees, and agents from any and all liability for any injuries, loss, or damage of any kind arising from or in connection with the West Point Bridge Design Contest or any prize won.
- 10.7 The U.S. Military Academy and the other contest sponsors assume no responsibility for lost, late, or misdirected entries, or for any computer, communications, or other technical malfunctions that may occur during registration or submission of contest entries.
- 10.8 Any attempt by any individual to deliberately damage a website, to gain unauthorized access to a contestant's registration account or Team Home Page, or to otherwise undermine the legitimate

operation of the WPBDC is a violation of criminal and civil laws, and should such an attempt be made, the U.S. Military Academy and the other contest sponsors reserve the right to seek damages from any such individual to the fullest extent permitted by the law.

10.9 Many local bridge design contests are conducted in conjunction with the national West Point Bridge Design Contest. These local contests use the WPBD software and the contest website; however, they are not affiliated with the U.S. Military Academy or the West Point Bridge Design Contest in any way. Neither the U.S. Military Academy nor the WPBDC Committee have any authority over, or responsibility for, the rules, procedures, or prizes used in any of these local contests. Any dispute or disagreement with the rules, procedures, or prizes used in any local contest must be directed to the local contest sponsor for resolution.