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RULES FOR THE 2020 HUMAN POWERED VEHICLE CHALLENGE ASIA PACIFIC QUALIFICATION EVENT



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I. Introduction

A) *Objective*

Teams have to demonstrate both their understanding of the rules and their capacity to develop a competitive entry prior to the main HPVC event.

B) *Scope of Qualification Rules*

These rules describe a qualification event to select teams for the HPVC Asia Pacific. Historically, the number of applicants is far too high to have a successful HPVC. This qualification event ensures that the most prepared and competitive teams advance to the main competition. These are NOT the complete rules for the competition overall. The overall rules for the competition are posted on the HPVC website.

C) *Superiority of Rules*

These rules have been established by the ASME's Human Powered Vehicle Challenge (HPVC) Committee. Should any conflict arise between these rules and those of the ASME, the ASME rules shall dominate. Should any conflict arise between these rules and other information regarding the ASME HPVC, whether generated by the ASME or any other organization, these rules shall dominate. Should any conflict arise between these qualification rules and the overall competition rules, the overall competition rules shall dominate.

D) *Additional Rules and Information*

All applicants are encouraged to read the entire competition rules before submitting qualification proposals. The overall competition rules can be found on the official HPVC website. Teams wishing to participate should consult the HPVC website, HPVC Facebook Community, and HPVC Question Forum.

Official HPVC Website: <https://community.asme.org/hpvc/default.aspx>

Official Rules and Forms: <https://community.asme.org/hpvc/m/default.aspx>

HPVC Facebook Community: <http://www.facebook.com/ASMEHPVC>

HPVC Question Forum: <https://groups.google.com/forum/#!forum/asmehpvc>

II. Qualification

A) *Report Content*

Teams must submit a 4 page maximum written proposal which communicates the team's capacity in the following areas.

1) *Design plan*

Describe your team's preliminary vehicle design features. Use figures to clearly demonstrate your plans.

2) *Testing and analysis plan*

Describe the testing and analysis that your team plans to do. What numerical analysis and physical testing do you plan to do and how? Do you plan on conducting supplemental analysis and testing to those already mentioned in the rulebook?

3) *Design and fabrication facilities*

Discuss your team's capacity to design and fabricate a vehicle appropriate for competition. Availability of instruction, advising, and facilities for the basic fabrication processes should be highlighted. In the event that such facilities are sub-standard, the team should discuss alternative solutions or outside manufacturing resources which may be utilized.

4) *Institutional and financial support*

It is important for teams to have the support of their home institution at an appropriate level (i.e. President, Dean, Department Head, Instructor). Teams must provide evidence of institutional support through a signed letter stating the levels of support clearly. Also, discuss sources and levels of financial support (e.g. institutional, personal, local business) and how it will allow your team to complete its objectives.

If a signed letter of support is available, this may be placed within the document being uploaded.

5) *Timeline and planning*

Proper planning of the various stages of the design, fabrication, and testing process are critical for a team's success. Communicate this plan so that it is clear that your team will have a fully-built and thoroughly-tested entry prior to the competition. The use of a Gantt chart or project schedule are highly recommended.

6) *Prior experience with the HPVC*

Prior participation is not a requirement for qualification and will not be a scored section. However, teams may wish to discuss how lessons learned from their previous experience with HPVC will enable them to be more successful in the present competition. This is the last page that counts towards page limit.

B) *Submission Deadline*

The submission deadline will be posted on the event website. **Qualification proposals must be submitted before the deadline and late submissions will not be accepted.** Failure to submit a proposal before the deadline will result in not being allowed to register for the competition.

C) Notification of Qualification Results

The judges will review the qualification submissions based on the criteria listed above, and will extend a formal invitation to successful entries by a date to be posted on the event website.

D) Non-participation

All teams must participate in the Qualification event in order to compete in Asia Pacific HPVC.

E) Number of submission per school

There will be no restriction to the number of Qualification proposals submitted per school. There will be a restriction of the top 3 scoring teams per school during qualification allowed to participate in the competition. An exemption to the team limit can be made at the discretion of the Head Judge.

F) Unique Proposals

Each team must submit a unique proposal. Multiple teams per university are allowed to submit proposals but the content of each one should be unique. Content that is duplicated from another proposal will not be counted for points for both teams without exception.

G) Scoring

Scoring of proposals will be done using the rubric in Table 1. A score greater than 0 must be met in order to qualify for participation in the competition. All proposals will be reviewed by multiple judges and their scores will be averaged to calculate the final score.

Qualification scores are not included in the overall competition scoring. These scores are used only to qualify for the competition.

Table 1: Qualification proposal scoring rubric

Demonstration of meeting the criteria	Points per criteria
Exceptional	4
Strong	3
Competent	2
Unsatisfactorily	1
Did not address the criteria	0

Table 2: Qualification proposal scoring breakdown

Criteria	Points Possible
Design plan	4
Testing plan	4
Design and fabrication facilities	4
Institutional and financial support	4
Timeline and planning	4
Prior experience with HPVC	0
Total Points Possible:	20

III. Qualification Report Format

Qualification reports must be a 4-page maximum written proposal. The qualification report shall use A4 page, 11 point Calibri font, single line spacing within paragraphs and double line spacing between paragraphs. Major headers shall be 13 point Calibri Bold, left justified. Margin shall be 1 inch top, bottom, left, and right. All figures and tables shall include a caption in 10 point Calibri italic font. Avoid watermarks and graphics that obscure text legibility.

The Qualification Proposal Cover Page must be attached to the front of the proposal. The cover page is available from the official rules and forms website linked in the introduction. Figures that support the proposal may be placed in the appendices and must be referenced in the text. It is essential that you cite the original source of an idea, information or an image. The number system may be used for in-text citation, followed by full references in the appendix of the report. The cover page and appendices will not be counted in the 4 page limit but all supporting text will count against the page limit.

Dimensions of all images, tables and charts must be such that its contents are understandable and readable.

All qualification reports must follow the following naming format:
“Year-hpvc-event-qualification-VehicleName-University”

Example:

“2020-hpvc-asia-pacific-qualification-Whitestreak-KIIT”