

HYUNDAI – NTU 3D Printing Challenge 2022 for Electric Vehicle (IONIQ 5)

FAQ

General

1	What is the design theme? Design Theme: Customized car accessories and parts In light of the soon to launch smart factory in 2022, HMG in Singapore is commemorating it's launch by inviting everyone in Singapore to participate in a challenge to designing a <i>Singapore oriented car accessory and/or car parts</i>. As Hyundai's new electric vehicle (EV) will be manufactured here in Singapore, show what it means to be built in Singapore by creatively flexing ideas to show the uniqueness of the red dot. Additional information for reference: ● The base model of a car, which will the 3D printed objects will be used is IONIQ 5, https://www.hyundai.com/worldwide/en/eco/ioniq5/highlights (link). ● IONIQ 5's new EV platform gives us the opportunity to re-create a new mobility experience. ● Interior of IONIQ 5 is spacious – Universal Island, an innovative moveable centre console that can slide back as much as 140mm. ● Use of eco-friendly and sustainably sourced materials to consist of the interiors.
2	What are the prizes? We will select 3 winning designs from Track 1 and 4 winning designs from Track 2 as the following: ● Track 1 ■ Grand prize: Cash award S\$5,000 ■ First Runner-up prize: Cash award S\$3,000 ■ Second Runner-up prize: Cash award S\$1,000 ● Track 2 ■ Grand prize: Cash award S\$10,000 ■ First Runner-up prize: Cash award S\$5,000 ■ Second Runner-up prize: Cash award S\$3,000 ■ Third Runner-up prize: Cash award S\$1,000 Winners will be contacted by the 31 July 2022.
3	Who can participate? The competition is open to everyone including students, designers, and public in Singapore.
4	When is the submission deadline? Deadline of submission is on <u>30 April 2022 (Extended)</u>.
5	Do I need to submit the design file? Yes, This competition only accepts digital design files and not the 3D printed part.

	For Track 1: The sketch or design idea should be submitted either hand drawn ideation sketch or a digital created file. For Track 2: The designed 3D model should be submitted as CAD file. The CAD drawing file of the 3D design should be saved in DWG, IGS, or STEP and exported STL file(s) of the 3D design with no error and ready for printing. Preferably include the native file-formats of the CAD-software they were made in. Please ensure that the digital design files are non-identifiable by names or watermarks for judging purpose. Please refer to the FAQ on “What should be included in the submission?” for detailed submission requirements.
6	Is there any limitation on the number of submission by the same designer? There is no limitation to the number of submission.
7	Is team entry allowed? Team entries are welcome. In case of a team wins, prize will be transferred to the team leader who is solely responsible for sharing it among team members.
8	Who owns the intellectual property (IP) of the submission? Awarded entry becomes the intellectual property (IP) of Hyundai Motor Group. The organizer will own the digital design file and also printed parts using the design files.
9	When will the competition result be announced? The winner will be notified via email or phone by 31 July 2022.

Submission of entry

1	Where should I submit my entry? Entry submission via email is preferred. Please send the entry package to: Mr Nicholas Ng, Email: nicholasnph@ntu.edu.sg Please send us <u>the shared link to download the files</u> through Microsoft OneDrive, Google Drive, OR WeTransfer. Please name your submission email with email header: “HYUNDAI – NTU 3DP competition, <your name>”
2	What should be included in the submission? Each track submission package will contain the following items: <u>Track 1- General :</u>

	● The sketch or design idea should be submitted either hand drawn ideation sketch or a digital created file. ● For hand drawn idea, dedicated competition official will reach out to assist on creating a digital sketch file for final submission. ● A description of your design in less than 250 words. In this write up, you may include images that strengthen your submission (e.g., screenshots, illustrations, drawings) ● Please ensure that the digital design files are non-identifiable by names or watermarks for judging purpose. ● A pre-recorded video presentation on your design is optional. ● Signed Registration Form. <u>Track 2 – Advanced:</u> ● The designed 3D model should be submitted as CAD file. ● The CAD drawing file of the 3D design (in DWG, IGS, or STEP) ● Exported STL file(s) of the 3D design with no error and ready for printing. ● Provide one clear rendered image of your design (max file size 10 MB). ● A description of your design in less than 250 words. In this write up, you may include images that strengthen your submission (e.g screenshots, illustrations, drawings) ● Please ensure that the digital design files are non-identifiable by names or watermarks for judging purpose. ● A pre-recorded video presentation on your design is optional. ● Signed Registration Form.
3	Must the entry reach the organizer before the deadline? Yes, please ensure that the entry will reach the organizer by 30 April 2022.
4	Will you provide an acknowledgement of receipt? Yes, we will send the acknowledgement of receipt via email.

Judging Criteria

1	Who are the judges? Panel of judges include experts in 3D printing, engineering, and design.
2	What are the judging criteria? We will be looking at the most inspiring, most well-designed, and showing the unique traits of Singapore car part/accessory to commemorate IONIQ 5, taking advantage of 3D printing technology.

	● It should be a car part/accessory that would function as an add-on for IONIQ 5. But should not be a stand-alone product. ● It should not require to be powered by external source of power. ● The judging criteria are Degree of Innovation, Functionality, Aesthetics, and Feasibility. ● The final object should not measure more than 40x35x40 centimetres volume.
3	Is there any limitation on the process? The winning entry will be printed using HP Multi Jet Fusion (MJF) technology, Fused Filament Fabrication technology, or Selective Laser Melting technology. There should not be any additional process being used to fabricate the part. Of course, support structure removal is allowed!
4	What materials will be used to print the part/accessory? The proper 3D Printing materials will be used to print the winning design. For HP MJF, participants can find design guides and the materials properties of the material via MJF handbook link on-link: https://reinvent.hp.com/us-en-3dprint-mjfhandbook A brief design strategy of MJF process is also founded in NTU MAE Event website.
5	Who else can I contact if I have further question? Please send your questions to Associate Professor Moon Seung Ki, School of Mechanical and Aerospace Engineering, Nanyang Technological University (Email: skmoon@ntu.edu.sg)

Organizers

Nanyang Technological University

Hyundai Motor Company and KIA Corporation

Sponsors

HP – NTU Digital Manufacturing Corporate Lab

Singapore Centre for 3D Printing