



# STUDENT ENGINEERING COMPETITION 2022

## DESIGN BRIEF

**NEXT STOP:**  
YOUR IMAGINATION

CREATE, SUBMIT AND WIN



## **Introduction**

The engineering design competition is a platform intended to allow engineering students from our partner universities to showcase the quality of their work and get recognition from their peers as well as government and private engineering bodies. The competition is of great importance as it offers students an opportunity to share their work, compete with their peers and get acknowledged. It also provides companies and recruiters an opportunity to discover emerging, innovative engineering technologies and to scope out skilled talent among the future graduates. This competition is exclusively open to engineering students whose universities are affiliated with the Dubai Knowledge Park (DKP) & Dubai International Academic City (DIAC).

## **The Competition Theme**

DIAC seeks to source the most creative and original design solutions for a smart and intelligent urban bus shelter. To that extent, participants are expected to translate, define, and expand on the competition brief in a way that aligns with the aspirations of a smart urban district. DIAC would like to explore options for a smart, multifunctional bus stop which also increases the level and accessibility of new services and experiences for visitors and citizens.

# Design Aspiration

## Architectural:

- Innovative
- It must have unique characteristics to match smart urban elements
- Immune to corrosion / Anti-electrocution / Anti-vandalism
- Natural ventilation
- Lightweight structure and heat insulation
- Must be accessible to People of Determination
- Integrated seating
- Scalable and demountable

## Smart and Sustainable:

- Unique visitors' experiences
- Zero / Near zero energy utilisation
- Integrated solar solutions
- USB mobile charger
- Intelligent voice announcement (optional)
- Digital advertising boards
- Digital map, traffic info and wayfinding
- Human centric and Day Lighting
- Intelligent LED light fixtures
- Integrated Bike / Cycle charging
- WIFI

- IoT sensors for human behaviour detection
- Customer experience and Help line station
- E-commerce portal (retail)
- Smart portal (ride booking)
- Security surveillance (optional)

## **Deliverables**

1. Concept Report
2. Cost estimate
3. Presentation boards / Model Miniatures

## **Evaluation Criteria for Project**

The DIAC team will evaluate the concept on the basis of how innovative the idea is. Additional considerations include quality of the materials proposed, conformity of design to the brief, understanding of customer expectations and the cost of the product. The product should be high in quality, low in cost and evoke user interest.

The proposals will be evaluated using a weighted scoring model:

### **1. Compliance with the Design Brief**

The concept should be highly functional, meaning it should do what is expected and do it very well.

### **2. Design Innovation**

The idea will be evaluated based on financial and technical feasibility of implementation, as well as possible benefits of project outcome on the society. The product will be

evaluated based on working mechanism, prototype, model, technical development of a solution using engineering process and skill as well as how thoughtfully the project is executed with respect to material selection, fabrication, experimental procedure, design, calculations, computer programming, electronics circuiting etc.

### **3. Project Cost Estimate and Feasibility**

This looks at the significance of the obvious asset of the proposals with regards to the balanced use of accessible natural resources within the project. Consideration will be given to those proposals which creatively articulate active and passive resources to assure more effectual use of energy and reduce negative impacts upon the ecological environment.

## **Competition Schedule**

The competition is scheduled to take place in Dubai International Academic City where all the students can register keeping in mind the due requirements for the competition. The following are key dates for this competition:

- Announcement of the competition – 1, June 2022
- Last day for registration – 10, Oct 2022
- Last date for project submission – 11, Nov 2022
- Presentation of the projects – 22 Nov 2022
- Result announcement & award ceremony – 29 Nov 2021

## Rules of Participation

- All the competitors must be students at universities or institutions affiliated with DKP or DIAC.
- The students can either register as individuals or in groups or teams.
- Each entrant may represent at most one individual project but may be included on any number of team projects.
- The work must not be copied and should be entirely designed by the students under the supervision of a qualified teacher or professor at the respective university or college.
- Each University may submit maximum of 3 entries of individuals or groups.
- Prizes will only be awarded to individuals who present their project at the competition. In extenuating circumstances this rule may be waived in agreement with the committee.
- Submissions must be accompanied by technical drawings.
- All questions and submissions should be emailed to [students@diacedu.ae](mailto:students@diacedu.ae).