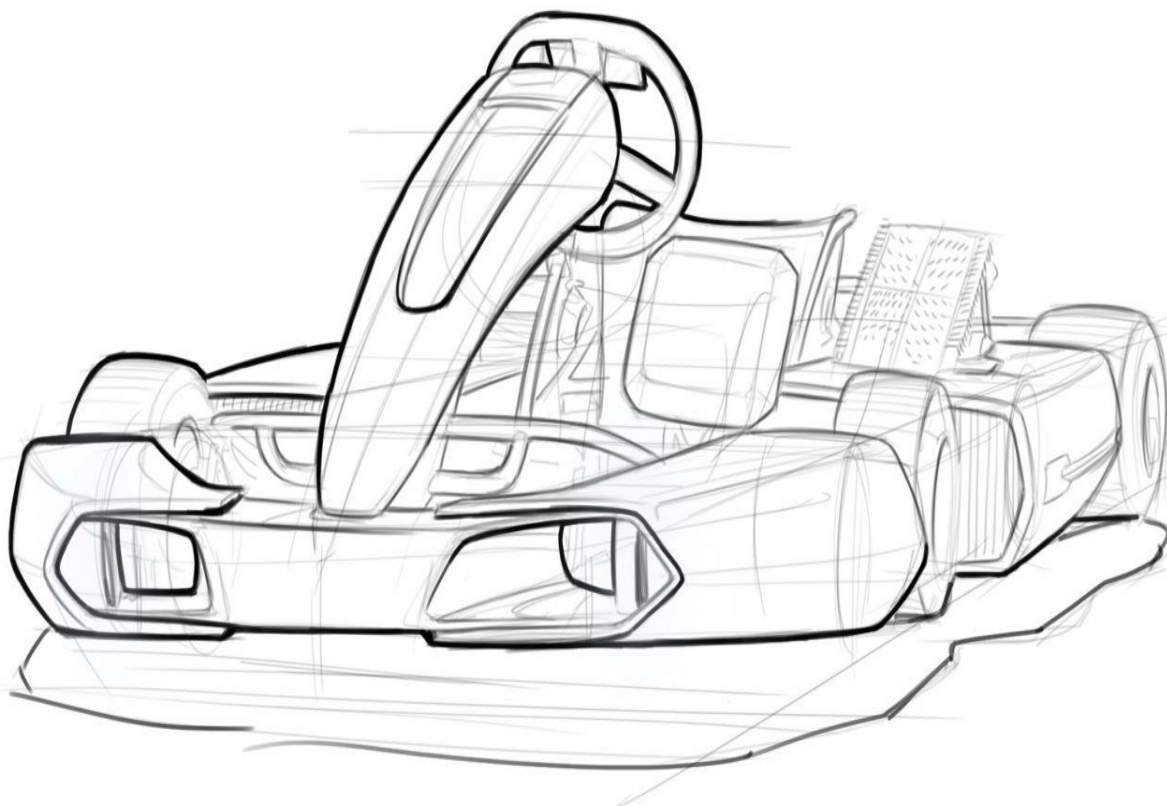




# GKDC CONCEPT 2023





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## GKDC CONCEPT 2023 EVENT TIMELINE

<b>Activity</b>	<b>Date</b>
Primary Registration	1 Dec – 31 Dec 2022
Registration Fee Payment	5 Jan 2023
Free Webinar on GKDC Concept 2023	23 Jan 2023
DSS Submission	15 Feb 2023
Free Mentorship Sessions	20 Jan – 15 Feb 2023
FMEA Submission	20 Feb 2023
Engineering Design Documents Submission	25 Feb 2023
Cost Report Documents Submission	28 Feb 2023
Team Member Information	5 Mar 2023
Online Design Presentation	15 Mar – 25 Mar 2023
Online Cost Presentation	25 Mar – 5 Apr 2023
Awards Ceremony	6 Apr 2023



## SECTION A – ADMINISTRATIVE REGULATIONS

### A.1. About GKDC Concept

GKDC Concept is the virtual design competition for the teams aiming to enter into the main competition and have less experience and exposure in the field vehicle designing and manufacturing. For this category the physical prototype of the vehicle is not required, however, teams can choose to present the physical components/systems/assemblies, if available. GKDC Concept invites participation in both, Combustion Vehicle and Electric Vehicle categories.

The purpose of the GKDC Concept is to provide teams with an opportunity to conceptualize and design a Go Kart in compliance with the GKDC Rules and Guidelines.

### A.2. Competition Objective

The objectives of the challenge include the following:

- To provide a platform for students aiming to build a Go Kart for the GKDC
- To assist teams with mentors who will be able to guide them through the process of designing and manufacturing the GKDC
- Act as a platform for students interested in fabricating the competition vehicle without investing huge amount
- To improve the level of teams aiming to take part in the GKDC

### A.3. Competition Procedure

- The competition is organized by ISNEE Motorsports Private Limited, and shall be hosted online.
- The competition shall be based around the Go Kart (CV/EV).
- The physical prototype of the vehicle is not required, however, teams can choose to present the physical components/systems/assemblies, if available.
- The design and rule guidelines shall be followed from the most recent GKDC Rulebook published on [GKDC Website](#) and this Handbook.
- Every evaluation shall be recorded and every report submitted by the teams shall be considered a “Public Report” (Article F4. of 10<sup>th</sup> GKDC Rulebook) and can be reproduced and distributed by the competition organization, in both complete and edited versions, in any medium or format anywhere in the world.
- The events shall also involve its own Q&A session with the relevant judging groups in scheduled time slots.
- Scoring of the events in the competition is done as follows:

Category	Specifics	Points
DSS	Design Spec Sheet + Q&A	50
FMEA	FMEA Report + Q&A	50
ENGINEERING DESIGN	Design Report + Design Presentation + Supporting Documents + Q&A	300
COST REPORT	Cost Report + Supporting Documents + Q&A	100
<b>TOTAL</b>		<b>500</b>



#### **A.4. Registration Process**

- Primary registration of the team can be done on <https://isnee.in/registration/GKDC-Registration.aspx>
- For those who intend to make payment via their institution or a private firm, please ensure that you provide the correct details of the Institution Name, Mailing Address and GSTIN. If yes, please share this information with the organizers before being invoiced.

#### **A.5. Registration Fee**

- The registration fee (non-refundable and non-transferable) of the GKDC Concept is ₹ 11500 + 18% GST.
- For those who intend to make payment via their institution or a private firm, please ensure that you provide the correct details of the Institution Name, Mailing Address and GSTIN. If yes, please share this information with the organizers before being invoiced.

#### **A.6. Fee Payment**

- Once the primary registration is verified and approved, the team shall receive a confirmation email (from info@isnee.in) on the registered email id. In some cases, this email might be found in the spam box, we advise you to check the spam folder, and add [info@isnee.in](mailto:info@isnee.in) as a trusted contact if you don't find the mail in your inbox.
- This email contains the Team Account credentials including the Registration ID and Password, teams can login into the Team Account on EMS using this id and password.
- Teams shall receive a Proforma Invoice (PI) within 12 hours of the registration which will remain valid until the fee payment deadline mentioned in this Handbook. Teams can use the following modes to make payment in line with the Proforma Invoice:
  - NEFT/IMPS
  - UPI/GPAY/PHONEPE
  - Payment Gateway (PayU Money) integrated with the Team Account on EMS

#### **A.7. Payment Confirmation**

- Once the payment is made, the reference can be sent to the WhatsApp helpline for confirmation.
- Upon the successful confirmation of the fee payment, the team shall receive a Tax Invoice on the registered email.

#### **A.8. Team Member Registration**

- The maximum number of members in a team is limited to 25; wherein 15 members can be registered without any extra charges while next 10 can only be added after paying ₹ 610 + 18% per member.
- The Team Member Information (TMI) must be completed in the Team Account on EMS on or before the TMI deadline.



## SECTION B – EVALUATION PROCEDURE

### B.1. Design Event

The Design Event consists of the evaluation of DSS, FMEA, and Engineering Design. Templates of DSS, and FMEA can be found in Team Account on EMS under the “Resources” tab. The evaluation starts at the time of submission and completes in the online presentation. Teams must submit the following reports in order to be evaluated for the Design Event:

- **DSS – Design Spec Sheet** [template available]
- **FMEA – Failure Modes & Effects Analysis** [template available]
- **Engineering Design Report** - The Design Report (DR) must not exceed 9 pages including the cover page. Not more than 4 pages of text, 3 pages of drawings and one optional page containing the content to be defined by the team.
- **Design Support Document** – If any

**B.1.1. Evaluation Procedure-** The evaluation is to be completed in two stages; i.e., report submission and online presentation. Reports evaluation is done for 20% of the points and online evaluation is done for the rest of the 80% of points.

- Each team gets 50 minutes for the presentation that includes 5 minutes for joining and system setup, 30 minutes for the presentation, and 15 minutes for Q&A.
- Maximum 6 members can involve in presentation and Q&A, however, rest of the team members can join for the purpose of learning from the evaluation and feedback.
- The sequence of presentation must address DSS first, then Engineering Design, and FMEA at the end.
- There is no limit on the number of slides in the presentation but teams must keep the content that can be presented within 30 minutes efficiently and effectively.
- The presentation will not be interrupted by Q&A, the Q&A starts at the 36<sup>th</sup> minute of the presentation. Presentations will be stopped right at the 35<sup>th</sup> minute; contents left (if any) will not be considered for presentation after this time.
- Every evaluation shall be recorded and every report submitted by the teams shall be considered a “Public Report” (Article F4. of 10<sup>th</sup> GKDC Rulebook) and can be reproduced and distributed by the competition organization, in both complete and edited versions, in any medium or format anywhere in the world.
- Details of scoring fields can be viewed in the team account under the “Resources” tab at EMS.

### B.2. Cost Event

The cost event is evaluated based on the submission of the “Cost Tables” and an online presentation. Template of “Cost Tables” can be found in Team Account on EMS under the “Resources” tab. The evaluation starts at the time of submission and completes in the online presentation. The main objectives of Cost Event are to teach the participants that cost and budget are significant factors that must be considered in any engineering practice.



- For teams to make trade off decisions between content and cost based on the performance advantage of each part and assembly.
- To gain experience with creating and maintaining a Bill of Material (BOM).
- For the participants to learn and understand the principles of Design for Manufacture and Assembly, lean manufacturing and Minimum Constraint Design.
- To provide a logical, simple and time efficient rule set enabling students to achieve the event's objectives.
- To improve fairness by providing consistent pricing guidelines independent of team geographical location by using standardized Cost Tables.
- To require the minimal burden of supporting documentation such as receipts or catalogue pages. However, in order to convey design information to cost judges engineering documentation (drawings, process descriptions, etc.) are required.

Teams must submit the following reports in order to be evaluated for the Design Event:

- Cost Tables [template available]
- Cost Supporting Document – If any

General requirements of Cost Tables are but not limited to:

- Use the standardized Cost Tables available in your account.
- List and cost every part on the prototype vehicle. This includes any equipment fitted on the vehicle at any time during the competition. The cost of any on-board fire suppression system, tires, video or radio system, and transponder does not need to be included in the Cost Report.
- Be based on the estimated costs of materials, fabrication, purchased parts, and assembly of the car. The costs must be calculated as defined in these rules.
- Be based on the actual manufacturing technique used on the prototype.
- Include tooling (e.g. welding jigs, molds, patterns and dies) for processes requiring it.
- Exclude R & D and capital expenditures (e.g. plant, machinery, hand tools and power tools).
- There is no maximum or minimum cost. Receipts are not required for any items.

The Cost Tables have been designed to:

- Be verifiable at the event. Differentiating between different types of materials (for example different alloys of steel) is not possible so no differentiation is made in the table cost.
- Minimize influence on safety equipment content. For example, driver harnesses are cost independent of the style chosen.
- Higher costs of some goods must reflect actually higher value of those goods. However, the costs must still allow for team innovation and vehicle content, with some reduction in cost score.

**B.3. Submission Procedure-** All the reports must be submitted as per the event timeline in the following manner:





- Teams must create a folder named as **"GKDC\_CONCEPT\_2023-Team\_Name"** on their google drive.
- Every submission must be renamed properly in accordance with the report names and the report name should be followed by the team name [e.g., FMEA-Team Garuda].
- A suitable report must be uploaded to the google drive folder on or before the deadline.
- Once the report is successfully uploaded on the drive, the team must intimate the organizers by sending an email to [gkdc@isnee.in](mailto:gkdc@isnee.in)
- The link to the google drive folder must be included in the intimation email with sharing permission open to all of the mail ids mentioned below:
  - [gkdc@isnee.in](mailto:gkdc@isnee.in)
  - [info@isnee.in](mailto:info@isnee.in)
  - [info.isnee@gmail.com](mailto:info.isnee@gmail.com)
- The subject of the intimation email must not be other than **"GKDC\_CONCEPT\_2023\_Report\_Name-Team Name"**
- Teams can request for re-submission if in case wrong/improper reports are submitted. In such a case, the request for rectification is to be sent to [gkdc@isnee.in](mailto:gkdc@isnee.in) within 3 business days after which no revisions shall be accepted. New reports will be accepted without any penalties if submitted within the stipulated time. Penalties are applicable as per the rulebook in case of late submission without prior permission.

**B.4. Evaluation Procedure-** The evaluation is to be completed in two stages; i.e., report submission and online presentation. Reports evaluation is done for 20% of the points and online evaluation is done for the rest of the 80% of points.

- Each team gets 40 minutes for the presentation that includes 5 minutes for joining and system setup, 20 minutes for the presentation, and 15 minutes for Q&A.
- Maximum 6 members can involve in presentation and Q&A, however, rest of the team members can join for the purpose of learning from the evaluation and feedback.
- There is no limit on the number of slides in the presentation but teams must keep the content that can be presented within 20 minutes efficiently and effectively.
- The presentation will not be interrupted by Q&A, the Q&A starts at the 26<sup>th</sup> minute of the presentation. Presentations will be stopped right at the 25<sup>th</sup> minute; contents left (if any) will not be considered for presentation after this time.
- Every evaluation shall be recorded and every report submitted by the teams shall be considered a "Public Report" (Article 1.8 of 9<sup>th</sup> QT Rulebook) and can be reproduced and distributed by the competition





organization, in both complete and edited versions, in any medium or format anywhere in the world.

- Details of scoring fields can be viewed in the team account under the “Resources” tab at EMS.



## SECTION C – AWARDS

The following awards (but not limited to) are presented by the competition:

1. Design Event
  - a. 1<sup>st</sup> Place
  - b. 2<sup>nd</sup> Place
  - c. 3<sup>rd</sup> Place
  - d. Best FMEA
  - e. Best Powertrain Package [EV Only]
  - f. Best Design
2. Cost Award
  - a. 1<sup>st</sup> Place
  - b. 2<sup>nd</sup> Place
  - c. 3<sup>rd</sup> Place
3. Overall Event
  - a. 1<sup>st</sup> Place
  - b. 2<sup>nd</sup> Place
  - c. 3<sup>rd</sup> Place

The Overall Top 3 teams will also receive a subsidy towards the registration fees at either of 9th or 10th GKDC (team can choose any one of these) main event in the following manner:

- 1<sup>st</sup> Place: ₹ 12,000
- 2<sup>nd</sup> Place: ₹ 8,000
- 3<sup>rd</sup> Place: ₹ 4,000