AN ISO 9001-2015 CERTIFIED COMPANY

RULEBOOK

18-21 August, 2026

VENUE-RPM International Racing Circuit, Bhopal

CONTENT

10. Markings

1. Organization & Championship

1.1 INDIAN E-BIKE CHAMPIONSHIP

Are you a Motorsports enthusiast?

If yes, then witness the soul stirring action of Country's best student E-Bike competing each other to wrap the charcoal track with the fumes of rage and dullness, Get a chance to design the dream, fabricate in reality and in all, charge it with sweat and passion, sheer determination and unruffled nerves to the heathen clocks challenging you Design your own E-Bike, fabricate it and battle at our tracks but make sure we are not just looking for the race lovers but Engineers, skill yourself with the finest of technicalities with your vehicle. It's not the burger which excites you, it's the motor power.

Don't believe us. The basic outline of event consists of designing and fabricating an E-Bike and then competing with these E-Bikes in the final race. All the participating teams will have no bars for creativity and innovation with few restrictions mentioned in the Rule Book. The real essence of the event lies in the sheer engineering practical application and tests in real time.

Each team is competing to have its design accepted for manufacture by a fictitious firm. The students must function as a team to design, innovate, build, test, promote and compete with a vehicle within the limits of the rules. The vehicle and associated documentation must be researched, designed and fabricated by the team members without direct-indirect involvement of professionals and faculty. Proof of manufacturing (photograph/video) can be asked to present at any time during the event. Vehicles, which have been professionally fabricated, may be penalized heavily or even disqualified from the competition. The decisions of the organizing committee in this regard will be final. Team must also generate financial support for their project and manage their educational priorities.

1.2 ORGANIZING COMMITTEE

The organization provides a platform to young enthusiasts, engineers and bike lovers to showcase their talent at a grandeur stage. Racing is not just about speed but more about how you survive breakdowns and the best way to do so is by competing with the best. Committee organizes motorsport events where you can learn and earn while having fun. The organization fosters innovation and provides students with an opportunity to be recognized at national level for Research and Development bikes in automotive engineering. Now it is the time to challenge your potential and experience the thrill by competing with the best minds of the nation. Design, innovate, learn and get ready to pull the throttle and win accolades across the country. Organizing committee holds all the rights to change the venue, dates, Prize Money of the event with the prior information of about one week.

1.3 OFFICIAL ANNOUNCEMENT

The official announcement regarding INDIAN E-BIKE CHAMPIONSHIP-2026 will be updated on www.hindustanmotorsports.in

2. Rules & Organization Authority

2.1 Rules Authority

There are several rules, regulations and restrictions which are to be followed by participating teams. Organizing committee is having right to impound each and every rule associated with the event. Violation by any participating member or team may be liable to be penalized severely, inclusive of and up to elimination of the team from the competition at any age or withdrawal of award/awards, as well. Ambiguities or questions concerning the meaning or intend of these rules will be resolved by IEBC-2026 O.C onsite during competition.

2.2 Rules Validity

Rules will be same throughout the event. However, amendments (if any) made will be informed to all the participating teams on their registered mail id.

2.3 Rules Compliance

By registering for this event the team members of the team, faculty advisors and other personal of college/university agree to comply with and will be bounded by the rules, interpretation or procedures issued or announced by IEBC-2026.All members are required to cooperate with and follow all instructions, penalties and result from the organizers, officials & judges. Disputes if any are subjected to Ujjain jurisdiction only.

2.4 Right to Impound

HINDUSTAN MOTORSPORTS reserves the right to impound any onsite registered vehicle at any time or at the stage during the competition for inspection and the examination by organizers, officials and technical inspectors.

2.5 Violation of Intent

The violation of intent rule be considered a violation of rule itself. Questions about the intent or meaning of a rule may be addressed by the organizers.

2.6 General Authority

IEBC-2026 organizing committee reserves the sole rights to revise the schedule or venue of the competition und interpret or modify the competition rules at any point of time and in any manner that is in their sole judgment, required for the efficient operation of the event or the IEBC-2026 as a whole. Also if the organizers find it to re-conduct the certain round or event in case of any disputes, confusion, failure in maintaining. Strictness or any other reason, then the organizers have full authority to reorganize event/particular round at their sole discretion without being questioned. Hindustan Motorsports has all the rights to make changes in event dates, venue, prize money, etc.

2.7 Loopholes

It is virtually impossible for a set of rules to be so comprehensive that it covers all possible questions about the vehicle's design parameters or the conduct of the competition. Please keep in mind that the safety remains of paramount importance during IEBC-2026 so any perceived loopholes should resolved in the direction of increased safety/concept of the competition.

2.8 Behaviour

Unsportsmanlike Conduct-In the event of unsportsmanlike conduct the team will receive a warning from an official. A second violation will result in expulsion of the team from the competition. Failure of a team member to follow an instruction or command directed specifically to that team or team member would result in a twenty-five (25)-point penalty

Arguments with Officials-Argument with, or disobedience to any official may result in the team being eliminated from the Competition. All members of the team may be immediately escorted from the grounds Smoking and Illegal Material - Alcohol, illegal drugs, weapons or other illegal material are prohibited on the event site during the competition. This rule will be in effect during the entire competition any violation of this rule by a team member will cause the expulsion of the entire team. This applies to both team members and faculty advisors. Any use of drugs or the use of alcohol by an underage individual, will be reported to the local authorities for prosecution.

2.9 Vehicle Movement

Vehicles may not move under their own power anywhere but on the practice or competition tracks. Off track vehicles must be pushed at a normal walking pace by means of Push Bar/members pushing the vehicle, with all four (4) wheels on the ground, a team member sitting in the cockpit to steer and brake and with another team member walking beside the bike During performance events when the excitement is high, it is particularly important that the bike be moved at a slow pace in the pits. Violation of this rule will result directly into the 25 points penalty.

Other Penalties

a. Violation of rules- 100 points disqualification
b. Misbehaviour/arguments with officials or volunteers-100 points/disqualification
c. Tampering with TI sticker or making restricted changes in vehicle after TI-100 points/disqualification
d. Entry without permission on tracks- 100 points disqualification

Intentional damage of track/tent/other properties will result to the penalty of Rs.5, 00,000 INR /- or more on the team also prize and certificates will not be awarded to the particular team/team members.

2.10 Protests

We recognize that there can be differences in the interpretation of rules, the application of penalties and the understanding of procedures. The officials and staff will make every effort to fully review all questions and resolve problems and discrepancies quickly and equitably.

Preliminary Review Required

If a team has a question about scoring. Judging, policies or any official action it must be brought to the organizers attention for an informal preliminary review before a protest can be filed.

Cause for Protest

A team may protest for dynamic round scores. Teams, team members or any other members may not protest for rule interpretations or actions Protest for any other issue other than dynamic round scores will be considered unethical and illegal with regards to this rulebook and appropriate legal action will be taken against such team/team members in this case. Such protest will also result in permanent disqualification or banned for future events.

Who can file the protest?

Only team captain on behalf of whole team can file the protest. Other team members should not accompany or interfere in filing of such protest.

Protest Format and Forfeit

All protests must be filed in writing in prescribed manner with in stipulated time and presented to the organizer. In order to have a protest considered, a team must deposit an Rs.30, 000/- amount, which will be forfeited if their protest is rejected.

Time duration to file protest

Protests concerning any aspect of the competition must be filed within half hour (30 minutes) of the posting of the scores of the event to which the protest relates.

Decision-The decision of the competition protest committee regarding any protest is final and is non-challengeable. All the disputes (If any) regarding the whole event are subject to only Ujjain Court jurisdiction.

3. Eligibility

3.1 Team Requirements

The team registering for IEBC-2026 must have a

- Team Name
- Team Logo
- Team Captain
- Drivers
- Faculty Advisor

Maximum 5 teams can register from one college but Team Name, logo, driver and must be different but faculty advisor can be same. There cannot be more than 30 members in a single team in any scenario.

Eligibility Criteria-Eligibility is limited to undergraduate and graduate students from engineering degree/diploma to ensure that this event is an engineering competition rather than a race, our sole motive remains the honing up of engineers and encouraging better engineering practices. Individual members of a team participating in this competition must satisfy the following requirements. Team members must be enrolled as degree seeking undergraduate or graduate students in a college or university. **(Team members who have graduated in 2025 can be a part of team as alumni member, he or she can hold any position in the team)**. Faculty Advisor Requirements- Each team is expected to have a Faculty Advisor appointed by the university. The faculty advisor is expected to work as a team advisor and is not allowed to interfere during static and dynamic events. Faculty advisors should not get involved directly or indirectly in design, build or repair any parts of the vehicle & ensure it is done by participating students only.

3.2 Team Registration

Team Registration Online registration will be open 24x7 on our website www.hindustanmotorsports.in from 1st October, 2025. Once the team has been registered online, the payment must be done at the time of registration and payment receipt should be uploaded with the registration form. (In case of payment failure within the due dates, online registration will be cancelled)

3.3 Registration Agreement

By registering in IEBC-2026 the Team Captain/Team Member/Faculty Advisor/College Management must agree with the rules and regulations. They understand that all the information provided in the registration documents and online registration forms are correct to the best of their knowledge Also, they accept that team would undertake all the activities without the help of a professional directly or indirectly. In case of violation of rules and regulations specified in this Rule Book, the team is liable for disciplinary actions as per the decision of the Management. The amount deposited by teams is non-refundable in any circumstances.

3.4 Registration Fee

Registration fees is non-refundable or adjustable in any circumstances. For extra member, Rs.1000/- per member (Maximum extra members that can be added is 5 i.e. the team size cannot be more than 30 in any case) and the option adding the extra members more than 25 will be available after the register phase.

Registration Fee-25,000+18% GST

BANK ACCOUNT DETAILS

Bank-State Bank of India

Account Holder-Hindustan Motorsports

Account Number-44501766263

IFSC Code-SBIN0030191

4. Driver's Requirement

4.1 Age

Every Team is supposed to have two drivers and both the drivers of the team must be at least 18 years of age.

4.2 Driver's License

Each driver must have a valid Driver's License issued by the Government of India (Learner's License not allowed). Both drivers must provide a license copy when insisted by Technical Committee.

4.3 Driver's Insurance

It is mandatory for both the drives to have a valid accidental and medical insurance to be eligible for the event.

4.4 Driver's Safety Gears

The following are the minimum requirements and restrictions that will be enforced through technical inspection, at any stage of competition. Noncompliance if any observed by the inspection/organizing/judging committee members must be corrected and no vehicles without passing the technical inspection would be allowed to participate further in the event. All the parts of Driver's Safety Gear must meet the required rating (specified). No driver would be allowed to drive the vehicle without the complete driver's safety gear in any of the dynamic event. All the safety gears shall have manufacturers labelled attached with a month & year of manufacturing, which is mandatory. Without label and invoice, teams will not be allowed to participate.

4.5 Driver Suite

A fire resistant one piece suit, made from a minimum of 1-layer that covers the body from the neck down to the ankles and the wrists. The suit must be certified to either one of the following standards and be labelled as such: SFI 3.2 (or higher) FIA Standard 1986.

4.6 Underclothing

It is mandatory for all the drivers to wear only SFI or FIA Rated fire resistant inner clothing. Cotton Inner wears are not allowed

4.7 Helmet

A well-fitting closed face helmet that meets one of the following certifications and is labelled as such Dot, Snell K2000, K2005, K2010, M2000, M2005, M2010, and SA2000. SA2005, SA2010 SFI 31.2A. SFI 31.1/2005 - FIA 8860-2004 FIA 8860-2010.**ISI Rated helmets are not allowed.**

Open-faced helmets and motocross helmets are not allowed. All helmets to be used in the competition must be presented during Technical Inspection where approved Helmets will be stickered. The organizer reserves the right to impound all non-approved helmets until the end of the competition.

4.8 Neck Support

The use of neck support is mandatory SFI 3.0/3.3A or above or FIA rated accepted.

4.9 Gloves

Only SFI or FIA rated gloves are accepted.

4.10 Shoes

Fire resistant shoes made from acceptable fire resistant material. Shoes must be certified to the standard and labelled as such SFI 3.3 or higher FIA 8856-2000.

Note: Sport shoes / Canvas shoes /Leather shoes / Industrial safety shoes are not allowed at any point of the event.

4.11 Balaclava

Balaclava should cover the driver's head, hair and neck, made of a fire resistant material. Only SFI or FIA rated balaclava is acceptable.

4.12 Knee & Elbow Guard

It is mandatory for all the drivers to use proper Knee and Elbow guards. If teams does not have knee and elbow guards they will be not be allowed to proceed further in the event.

4.13 Socks

It is mandatory for all the drivers to wear only SFI or FIA rated fire resistant socks. Cotton or any other socks are not allowed.

NOTE-Driver kit must not be more than 3 years (SFI rated) & 10 years (FIA rated) old respectively from date final event date. If team has two drivers than both the drivers should be available at the time of TI along with their respective driver kits. Both the driver has to use separate driver kits. If any team is found seen violating the rule and also if they are seen using any other team kit material then the respective teams will be directly disqualified from the event. Manufacturing date of all the driver equipment must be mentioned on the respective equipment with valid SFI or FIA tags unless it will be treated as expired.

5. Technical Specifications

5.1 Vehicle Type

Retrofitting Type

The motive of this segment of Retrofitted bike is to provide immense riding pleasure to the users without changing the bike essence. A light weight, smooth and fast to ride vehicle of this class should provide an ultimate eco-friendly and economical cruising experience to end users.

Self-Manufactured Type

The motive of this segment is to manufacture an Electric Motorbike which in future meets the commercial requirements and promotes E-Mobility among the society.

5.2 Design

Retrofitting Type

- It's mandatory to keep the dimensions of the bike same as they were before retrofitting. The battery pack, motor and any other innovative conclusions should not change the length, width and height of the bike.
- Maximum width of the bike will be measured from end to end points of handle.
- All parts of the bike including the driver should lie within the end to the end points of the handle.
- The maximum weight of the retrofitted bike must not exceed 160 Kg.
- Bodyworks can be of any material and ensure good aesthetics.
- You need to remove the fuel tank and use your own bodyworks which cover the battery pack and other components. Available fuel tank casing is not allowed, it should be replaced with bodyworks.

Self-Manufactured Type

- The wheelbase of the bike should be in the range of 48 inches to 62 inches.
- The minimum ground clearance should be 5 inches
- The maximum length should not exceed more than 80 inches.
- The maximum width of the bike should not be more than 40 inches
- The maximum height of bike without rider should not be more than 60 inches.
- No points will be awarded if the weight of the bike will be more than 150 kg.
- Bodyworks can be of any material and ensure good aesthetics, soft plastic is not allowed.

5.3 Wheels

The minimum diameter of the tires should be 16 inches. Teams are allowed to use alloy wheels as well as spoke rims. The maximum allowed tire width is 7 inches. Bicycle tires and Slick Tires are prohibited

5.4 Paddock Stand

It is compulsory to have a paddock stand for both classes. It is compulsory to have side stand for both classes. Main Stand is prohibited. Maximum height of the paddock stand should be 78 cm. Maximum length of the paddock stand should be 50 cm. Maximum width of the paddock stand should be 54 cm.

5.5 Chassis

Retrofitted Class

Teams are instructed to use the same frame as availed from the bike. All welding points in the frame should be intact and damaged frames will be disqualified on spot.

Teams are recommended to use the same material as acquired with the bike for other mountings. In the case of steel, minimum carbon percentage should be 0.1%. Certificates should have the date of testing.

Manufactured Class

Teams are instructed to use seamless tubes only for the parts where tube like structure is used. Teams should manufacture double cradle frame only. Double cradle frame should consist of two main pipes.

Teams can use any material – steel/aluminium/carbon fibre for the frame. In the case of steel, minimum carbon percentage should be 0.1%. Teams need to produce the material composition and strength test certificate from certified labs with the GST purchase bills. Certificates should have the date of testing.

5.6 Ergonomics

Rider's ergonomic ease should be considered in the design. The teams must provide the ergonomics report. The design should minimize any discomfort while maximizing the comfort and performance of the rider.

5.7 Frame Dimension

Teams who are retrofitting their bikes are instructed to use the same frame dimensions as available from the bike.
5.8 Brake Light.

Manufactured Type

- Maximum Length-80 Inches
- Maximum Height-60 Inches
- Maximum Wheelbase-48 to 62 inches
- Maximum Width-40 Inches

5.9 Gyroscopic Effect

Retrofitted Class

Teams must not make any major changes to the frame as it may affect the predefined gyroscopic features of the bike. Teams must add the required components on the frame keeping in mind the gyroscopic effect of the bike. Engine compartment must be completely visible to inspectors.

Manufactured Class

Teams must manufacture their frame keeping in mind the gyroscopic effect of the bike. Balancing the bikes should be easy and should be ergonomically comfortable to the rider.

5.10 Seats

Self-Manufactured Class must use pre- manufactured seat and its mounting should be according to the seat. Retrofitting Class must use same seat.

5.11 Mudguards

It is mandatory for all the vehicle to have front and rear mudguards.

5.12 Suspension

Retrofitting Type

Teams are allowed to use the same suspension system of the bike. The mounting of the front suspension should be done according to the rake/caster angle of the bike. Teams are allowed to use either mono-shock or twin shock suspension at the rear as acquired from already purchased bike. Mono-shock Dual-shock suspension.(If any team wishes to change the front or the rear or both suspensions, it has to be mentioned in the design report which will include design, CAD Model, Dynamic Simulations and how it differs from bikes original system).

Manufactured Type

Teams are allowed to use a pre-fabricated suspension system of any bike at front as well as at the rear. The mounting of the front suspension should be done according to the rake/caster angle of the bike. Teams can

customize both the suspension system. Teams are allowed to use either mono-shock or twin shock suspension at the rear. If Teams customize the suspension system, they have to mention entire suspension design report and all calculations including CAD Model and Dynamic Simulations.

Restrictions for both type

Teams should Calculate Spring or Damping Lag on both the Suspension systems. Teams have to calculate Squat and Dive occurring on Bike. Teams should have the calculation of the spring

5.13 Steering

Teams are allowed to use a pre- fabricated bike handle in both the classes. Teams can modify the handle according to their requirements in both the classes, but the modification details should be mentioned in the Design Report including its methodology.

The turning angle must be limited with stoppers on both sides. These stoppers should be made of nylon, aluminium or materials of similar hardness. Neither the chassis, nor any other part of the prototype may act as a steering stopper. The minimum turning angle of the steering must be 15º measured on either side of the longitudinal axis of the prototype. The allowed rake angle is 220 to 320. Steering Axis Inclination should have offset with the front wheel centre. The steering system must have positive steering stops that prevent the steering linkages from locking up.

5.14 Brakes

The bike must be equipped with brakes on both the wheels, operated by a different control and retrofitted class bike can use a mechanical or a hydraulic or a combination of both braking system, self- manufactured class bike must use a hydraulic braking system.

It must have two independent hydraulic circuits such that in the case of a leak or a failure at any point, the effective braking power is maintained on at least one of the wheels. Each hydraulic circuit must have its own fluid reserve, either by the use of separate reservoirs or by the use of a dammed, OEM-style reservoir.

For Self-Manufactured Type "Brake-by-wire or Mechanical" systems are prohibited.

Independent braking systems may share components deemed “not prone to failure” provided that they are amply dimensioned and readily accessible for maintenance. Components, not prone to failure are:

a) A brake pedal and its bearing

b) Brake lever

The brake system must be capable of locking the wheels at a time during the brake test. The bike should not yaw more than 30 degrees while braking. Retrofitting Class can use Drum or Disc or both in Combination Brake Types at front and rear. It is mandatory to use only Disc Brakes at the front and the rear, for the Self-Manufactured Class. The front and the rear should have different disc diameters for Both Classes. Teams should calculate the Heat dissipation, the Braking Torque and the Braking Force in Newton as well as with respect to G-Force.

Disc Brake

Ventilated Discs are prohibited.

Disc Brake

Front Brake Pedal should be of lever type and should be hand operated. Rear Brake Pedal should be mounted near the foot rest and should be foot operated. Loose mounted brake lever and pedal are strictly prohibited. Front Brake Lever Rear Brake Lever

Brake Light

The bike must have red coloured brake lights at the rear. Team may use any bike brake light but the brake light should be visible from a distance of 30m. (LED light strips are not allowed to use as a brake light) from even in

daylight. Brake light should also function even when the motor is killed-off and it should glow continuously when brakes are applied.

5.15 Dashboard

Team must install a standard dashboard on the vehicle (Smart dashboard are also allowed) The Dashboard must be behind the vertical plain drawn from Head Light and the working of the same has to show to the technical inspector.

Standard Dashboard

Dashboard should display readings of the Speed, Batter Level Indicator, Battery Temperature, Turn Indicators, and High Beam & Low Beam Headlight Indicator. Dashboard should not exceed beyond headlight. Maximum dimensions of the dashboard: - Length – 12 inch, Width – 9 inch. The dashboard should have protective covering from dust and water. It should be visible and accessible to the rider easily and must be rigidly mounted.

Smart Dashboard

Dashboard should display readings of the Speed, Batter Level Indicator and Battery Temperature, Turn Indicators, High Beam & Low Beam Headlight Indicator and Smoke Detection Indicator. Teams are allowed to use a Tablet, Mobile or any other Digital Integrated Dashboard in the Bike. The Dashboard should be connected to an external device through an application. Dashboard should not exceed beyond headlight. Maximum dimensions of the dashboard: - Length – 12 inch, Width – 9 inch. Team must show the actual performance of the Health Monitoring System. The dashboard should have protective covering from dust and water. It should be visible and accessible to the rider easily and must be rigidly mounted.

5.16 Speed Controller

Teams are required to run their vehicle on different modes, show working of Speed controller system and should also check vehicle's practical performance. Teams need to select the modes and they need to accelerate till the stop line and while accelerating at stop line, the power should not go beyond the max power limit. The speed of the vehicle in each mode should be visible on the dashboard It should display mode of vehicle on dashboard and It is mandatory to install Speed Limited Based Modes.

5.17 Fasteners

Locking nuts are mandatory to be used everywhere in the vehicle. All bolts used in the system must meet metric grade M8.8. No fastener used should be less than 8.8 hardness. Thread lockers spring washers are prohibited. All fasteners used should have minimum three (3) threads showing past the nut.`

5.18 Kill Switch

The electrical system must include at least two kill switches. One should be accessible by the driver inside the Cockpit and another should be accessible by the officials, inspectors, and coordinators in case of emergency. The kill switches must NOT deactivate the brake light. Kill switch must kill the engine on pressing only, not on pulling.

5.19 Throttle

The throttle installed in the bike must be retractable. The throttle must be covered with a proper grip comfortable enough for the rider's actuation5.21 Horn

5.20 Fuse

The circuit on the HV side must be protected by at least one fuse. Since the battery has very low internal impedance, instantaneous high currents can flow which can seriously damage the battery. Teams should mandatorily use an MCB (mini circuit breaker) which should be instantaneously able to isolate the battery from the other electronic devices to protect the battery from an overload. The current rating of fuse should be greater (15% to 20%) than the current carrying through the wire on which it is installed. If several cell strings are mounted in parallel, each of these strings must be protected with an own independent fuse. The fuse holder must be rigidly mounted on the chassis. The tractive system must be appropriately fused.

5.21 Head Light

Head light should be connected to the auxiliary battery (12V) or DC-DC converter. It should be able to glow once the vehicle is turned ON. There should be a separate switch for Head light mounted on handle. It should be able to on high beam and low beam light.

5.22 Tail Lamp

Tail light should be connected to the auxiliary battery (12V) or DC-DC converter. It should be able to glow once the vehicle is turned ON. Tail light should turn ON while braking.

5.23 Electrical System

The electrical system must include: Battery pack, Motor, Controller, Brake light, indicator and all other equipment should use this power source. For electrical innovations, the power supply must be taken from the battery Pack.

5.24 Battery

- Battery Type-Any kind of lithium ion cell chemistry.
- Maximum Voltage 72V
- Maximum Power-2.5 KWh

Battery must be able to provide power to all safety items (Brake Light, Indicator Lights, and Horn). Batteries must be properly insulated with the insulating Material.

- Lithium ion battery pack must have a Battery Management System and the same rated for Electric Vehicle application providing proper cell balancing voltage protection, over current protection, short circuit protection.
- The technical details along with data sheets of cells and BMS used in the battery packs must be submitted along with design report.
- The battery cover should be made up of rigid plastic/ glass fibre/ sheet metal, with an insulating coating. The cover material of battery pack must be fire and electric proof and properly insulated.
- The casing of the battery should be fixed with the chassis. Team can use cooling fan or hoses for this purpose. The casing of the battery should be fixed/ welded/ fastened by lock nuts with the chassis

5.25 Charging

Team can have their own charging system design but charger input voltage is fixed at 230V 50Hz AC. Charging current can be set between 6A – 15A. A charging system/charger should be rated for the battery pack according to the specifications and should be rated for the battery and insulated. The vehicle /charger should indicate user if any charging operation is underway through LED light. The charger should have over voltage protection, over current protection, short circuit protection, reverse protection. Proper plugs should be used and there should not be loose running wires. On- board charging systems are allowed.

5.26 Motor

Teams can use BLDC motor of any type. No constrains on RPM and Torque. Teams are allowed to use BLDC Hub motors.

- Maximum Voltage-72 V
- Maximum Power-2000 watts

Controller: Teams are free to use any type of controller suited for the motor but have to show the specification sheet of the controller.

5.27 Transmission

Transmission: Teams are free to use any type of transmission but is must be clearly visible at the time of engineering design presentation event. Belt drive, chain drive or gear can be used for power transmission.

It is mandatory for the teams to use a rear wheel drive. There is no limitation with the sprocket ratio installed in the bike. Teams are allowed to make changes to the sprocket ratio as per their design.

5.29 Fire Extinguisher

Teams should have a fire extinguisher of minimum 2kgs at event site (1 kg must be rigidly mounted on the Vehicle). It should be of ABC type and very easily accessible by both driver and outsider.

6. Presentation Round

In the Presentation Round, all the teams are required to showcase their research and development in a presentation and also the same should be mailed at **info@hindustanmotorsports.in** The prime objective is to design the complete CAD Model, B Plan, and Prototype of the E-Bike. The design should be complete in all respects to the extent of being considered ready-to-manufacturing. The teams will be evaluated based on their knowledge of the basic automotive design technology and about the E-Bike design and manufacturing requirements. There will not be any elimination for the teams who are appearing for the virtual round. Further details/guidelines for the virtual round will be released on team login page. Documents to be prepared:

Vehicle Design

Design Report

Innovation Report

Cost Report

Design Validation Plan

Gantt chart

6.1 Design Report

The design report must contain all the necessary details related to the vehicle like analysis, calculations, etc. This report must not exceed 15 pages and it is recommended to provide at least three different views of vehicle drawing with proper dimensions. This can be verified during Final Round. Further guidelines will be uploaded in the team account on website.

Only top 3 teams will be selected for Final Design Evaluation round in the final event.

6.2 Cost Report

The cost report must include all the calculations and cost of the parts procured and also its machining cost as per market rates. Only GST bill accepted in cost reports. All original bills needed.

A detailed BOM must be provided including each and every details of all the assemblies separately. It should also cover details about the process, raw material and cost associated to that particular part.

Only top 3 teams will be selected for Cost Report Presentation round in the final event.

Event rules are: 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.

Event Requirements

This event is comprised of three (3) parts

Part 1 "Cost Report the preparation and submission of a report (the "Cost Report"), which is to be sent which is to be submitted.

Part 2 "Discussion" A discussion at the Competition with the Cost Judges around the team E-Bike. This evaluates not only the cost of the bike, but also the team's ability to prepare accurate engineering and manufacturing cost estimates.

Part 3 "Real Case" Real case scenario where students will have to respond to a challenge related to cost of manufacturing of the student vehicle

Definitions The following definitions will apply throughout the cost event rules

Adjusted Cost-The final cost for the vehicle including penalties Amended Cost the cost of the vehicle after modification by the competition addendum

Bill of Material - A hierarchical list of all parts of the vehicle Cost Report All materials, including electronic and hard copy submitted for judging Cost Tables All tables that list costs for objects and processes Design for Manufacture and Assembly (DFMA) the process where parts are designed for ease of manufacture and assembly, resulting in lower cost. Fixed Cost Costs associated variable costs when included in the Cost Report

Initial Cost The cost of the vehicle submitted for initial judging in the Cost Report

Lean Manufacture - A methodology for producing goods that emphasizes the elimination of waste and improvement in process how with the goal of optimizing the cost and quality of goods.

Minimum Constraint Design (MCD) A design methodology emphasizing elimination of redundant constraints in the attachment of parts. Each part requires constraint in six degrees of freedom and additional constraints can make assembly difficult force tight tolerances and increase the cost of manufactured goods.

Purchased Parts Also called bought parts: these items are listed in the Cost Tables in a near as installed condition. For example wheels, engines and motors are purchased parts. In some cases, purchased parts may still require additional processing before they can be assembled to the bike. Wheels, for example, do not include the machined features for mounting to the hub. Purchased parts do not include fasteners unless specifically noted in the Cost Tables.

Quantity the amount of the item.

Raw Materials used for manufacturing parts such as aluminium, steel and rubber hose.

Tools refer to hand or power tools used to assemble the vehicle. The costs of these tools are not included in the Cost Report the effects of the tools used for assembly are captured in the process tables for labour as different costs are given based on the tools used for assembly.

Variable Cost is a cost associated with production that is proportional to the vehicle volume produced. All costs submitted with the Cost Report will be variable costs.

General Requirements- The Cost Report Must:

Use the standardized Cost Tables.

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, rain tires, video or radio system, and transponder does not need to be included in the Cost Report.

Be used on the estimated costs of materials, fabrication, purchased parts, and assembly of the E-Bike. The costs must be calculated as defined in the rules

Be based on actual manufacturing techniques used on the prototype.

Includes tooling for processes requiring it.

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

6.3 Business Plan

All the teams have to submit and present a business plan associated with the E-Bike manufactured by them. Teams may also present a prototype of their plan.

Only top 3 teams will be selected for B Plan round in the final event.

6.4 Innovation Report

It is not mandatory for all the teams. This report and event does not have any point and will not have any impact on overall rankings of the teams. In case any team is doing any kind of innovation in their E-Bike they must submit all the reports at the time of virtual round and which will be verified and examined physically at the time of final event.

We highly recommend all the teams to have some innovation in their E-Bike

7. Static Events

7.1 Technical Inspection

Objective to determine if the vehicle meets the IEBC-2026 Rules requirements and resections and if considered as a whole, it satisfies the intent of the Rules.

For purposes of interpretation and inspection the violation of the intent of a rule is considered a violation of the rule itself.

Technical inspection is a non-scored activity.

B. Inspection & Testing Requirement

Each vehicle must pass all parts of technical inspection and testing, and hear the inspection stickers, before it is permitted to participate in any dynamic event or to run on the practice track.

C. Team Responsibility

Teams are responsible for confirming that their E-Bike, and the required equipment, satisfies the requirements and restrictions of the IEBC-2026 Rules before presenting it for Technical Inspection Presenting a E-Bike for Technical Inspection constitutes a declaration by the team that they have determined by self-inspection that the vehicle complies with the Rules.

D. Items to be Inspected- The Technical Inspection Sheet (detailed list of items) to be inspected will be available on website.

E. Technical Inspection Procedure-

a. Collage level Technical Inspection- In-House IT is the preliminary technical inspection of the E-Bike inside the college itself and it will be executed by Faculty Advisor. Separate guidelines for collage level TI will he made available in the account. Minimum of 80% work completion is required in order to attend the college level TI.

b. Technical Inspection in Final Round - Technical Inspection in the final round will examine all items included on the TI Sheet that can be found in team account plus any other items the inspectors may wish to examine to ensure conformance with the Rules. The exact procedures and instruments employed for inspection and testing are entirely at the discretion of the Chief Technical Inspector. Decisions of the inspectors and the Chief Technical Inspector concerning vehicle compliance are final and are not permitted to be appealed.

c. Inspection Condition- Vehicles must be presented for technical inspections in finished condition, i.e. fully assembled, complete and ready to-run. Technical inspectors will not inspect any vehicle presented for inspection in an unfinished state.

NOTE: E-Bikes may be presented for technical inspection even if final tuning and set-up has not been finished.

d. Correction and Re-inspection- If any part of a vehicle does not comply with the Rules, or is otherwise deemed to be a concern. Then the team must correct the problem and have the E-Bike re-inspected. The judges and inspectors have the right to re-inspect any vehicle at any time during the competition and require correction of non-compliance.

"As-Approved Condition" Once a vehicle has passed inspection, except as specifically allowed for "Modification and Repairs", it must remain in the

"As-approved" condition throughout the competition and must not be modified

F Driver Exit Time- A inflexible part of technical inspection where driver must come out of the E-Bike in 5sec with or without the steering wheel.

7.2 Manufacturing Test

This test is to check team members manufacturing skills it can be welding, cutting, grinding, drilling, etc.

8. Dynamic Events

8.1 Acceleration & Brake Test

Brake Test

Brake test does not have any points but it is mandatory for a vehicle to pass the brake test to participate in further dynamic events. The vehicle must stop within a straight line after the brake is applied on the vehicle and the wheels on which the brake mechanism is acting must get locked immediately after the pedal is pressed. Each vehicle will be given only 3 attempts to clear the brake test. Vehicle dynamic stability will also be checked during this test, vehicle possessing abnormal behaviour will be checked again. The TI can be cancelled if the vehicle is found dynamically unstable or unsafe in the Brake Test. Further guidelines will be elaborated on venue only.

Acceleration Test

The guidelines will be elaborated on venue only.

Scoring Formula-Acceleration score 100x (T (longest- Yours)/T (Longest-Shortest))

NOTE: Each team may make two (2) attempts may or may not with different drivers Scoring will be based on the better of the two attempts.

The objective of the skid-pad event is to measure the E-Bike cornering ability on a flat surface while making a constant-radius turn.

8.2 **Autocross Test**

The objective of the autocross event is to evaluate the vehicle's manoeuvrability and handling qualities of a tight course without the hindrance of competing vehicles. The autocross course will combine the performance features of acceleration, braking, and cornering into one event.

Procedure-all details provided in final dynamic rounds.

NOTE: Each team will get two (2) attempt only

Scoring Formula-Autocross score 100x (T (longest- Yours)/T (Longest-Shortest))

Penalties-Will be disclosed at event site.

Note-Timing can be electronic/manual.

8.3 **Off Roader**

The objective of off roader test is to evaluate the bike's performance and durability in challenging off-road conditions. Unlike traditional road races, off-road tests focus on assessing the bike's ability to handle rough terrain, steep inclines, obstacles, and adverse weather conditions. The test allows riders to assess the effectiveness of the bike's suspension system in absorbing impacts and vibrations encountered on rough terrain, ensuring a comfortable and controlled ride over long distances

Procedure-all details provided in final dynamic rounds.

NOTE: Each team will get two (2) attempt only

Scoring Formula-Off Roader score 100x (T (longest- Yours)/T (Longest-Shortest))

Penalties-Will be disclosed at event site.

Note-Timing can be electronic/manual.

8.4 **Kills the Hill**

The objective is to evaluate the bike's climbing ability, power output and efficiency when ascending steep inclines. This test simulates real-world riding scenarios where e-bikes may encounter challenging uphill terrain, such as

mountainous trails or steep road gradients. Hill climb tests assess the e-bike's ability to ascend steep inclines with efficiency and power, showcasing its climbing capabilities and performance under load.

NOTE: Each team will get two (2) attempt only

Scoring Formula-Kill the Hill score 100x (T (longest- Yours)/T (Longest-Shortest))

Penalties-Will be disclosed at event site.

Note-Timing can be electronic/manual.

8.5 **Time Trial**

This event is to decide the pole position of the bikes for endurance. Team completing one lap in the shortest time will be given first pole position in the endurance and other teams will be given position as per their time taken to complete one lap in time trials. Teams failing to complete time trial in given time or judges and officials finds any issues in the bike while time trial then that team will be declared as **NOT FIT FOR ENDURANCE** and will directly be disqualified from Endurance.

8.6 **Endurance Test**

Endurance details for this event will be disclosed at the event site only.

Mechanical Problem- No additional penalty other than the time lost to ensure that the vehicle is safe to continue.

Reckless or Aggressive Driving- Any reckless or aggressive driving behaviour (such as forcing another vehicle off the track, refusal to allow passing, or close driving that would cause the likelihood of vehicle contact) will result in a black flag for the driver. When a driver receives a black flag signal, he must proceed to the penalty box to listen to a reprimand for his driving behaviour. The amount of time spent in the penalty box will vary from one (1) to four (4) minutes depending upon the severity of the offense.

Inexperienced Driver-The Chief Director of Operations may disqualify a driver if the driver is too slow, too aggressive, or driving in a manner that, in the sole opinion of the event, officials, demonstrates an inability to properly control their vehicle resulting in a DNF.

9. Results

9.1 Results

All the results of dynamic and static tests will be written on sticker at event site or on the team's marking sheet.

The decisions by the officials will be the final and teams must comply with it. No team has the right to object the decision of the officials regarding the result. Teams are requested to settle any dispute in a professional manner.

10. Markings

PRESENTATION ROUND	
DESIGN REPORTS,PRESENTATION & CAE	200
BUSINESS PLAN PRESENTATION	100
COST REPORT PRESENTATION	100
TOTAL POINTS	400 POINTS

STATIC ROUND	
TECHNICAL INSPECTION	QUALIFIER
MANUFACTURING TEST	150 POINTS

DYNAMIC TESTS	
BRAKE TEST	QUALIFIER
ACCELERATION TEST	100
AUTOCROSS TEST	100
OFF-ROADER TEST	100
KILL THE HILL	100
TIME TRIAL	100
ENDURANCE	450
TOTAL POINTS	950 POINTS

TOTAL POINTS	1500 POINTS

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