

# NATIONAL KART RACING CHAMPIONSHIP 2015

## SEASON 2

VIRTUAL ROUND



**VIKRANT GROUP OF INSTITUTIONS, INDORE**

Behind Veterinary college A.B. Road Mhow, Indore

ON

**18<sup>th</sup> & 19<sup>th</sup> July, 2015**



## About - Vikrant Group of Institutions

The institute offers specialized university level programs of formal education with a well oriented approach to institution resourcing that fully recognizes the public and private sector and provide the learner with multiple career options. Beyond gaining specialized knowledge in the chosen field, students will also develop habit of learning continuously and independently. Graduates of the institute will be professionally equipped to respond confidently in the field for adapting to the changes and managing them.

The campus is situated on inspiring horizons all around, easily accessible from the city and located near industrial area of Pithampur. The infrastructure is designed for motivated learning with state of the art facilities to match the management teaching pedagogies. The culture motivates free thinking. It builds multiple strengths to nurture a responsible professional. The Academy aims to attract professionals with technical background and sound values to generate synergy for a cultured growth, promoting meritocracy through reward policies. The overall environment is built on the philosophy of nurturing healthy body & mind. The candidates are empowered to grow by creating their own professional networks.

The campus accommodates Academic block, Administrative block, Library block and Workshop surrounded by gardens. A provision is kept for canteen, playgrounds for games and recreation; open Auditorium, separate hostels for girls and boys and residential blocks.

Professional education and training is one of the most significant components of Human Resource Development with great potential for making contributions to the National economy and improving the quality of life of the people. In recognition of this fact, the successive Five-Year Plans and the National Policy on Education have placed great emphasis on the introduction of professional education at undergraduate and postgraduate levels.

Expansion of professional education in the post- independence era is unprecedented in the education history of the country. With the Globalization of our economy and policy of liberalization, the demand for professionally competent human resources will continuously increase. The solution lies in providing facilities for professional education, research and training which alone can develop competent generations suitable for business, industry and public administration.

## NKRC 2015 Virtuals – Guidelines for participating teams

The Virtual Round is a pre-qualifier to participate in the NKRC 2015 main event and prime objective is to design the complete CAD Model of the Go-kart. The design should be complete in all respects to the extent of being considered ready-to-manufacturing. This event is scheduled on 18th & 19th July, 2015.

The teams will be selected based on their knowledge of the basic Automotive Design Technology and about the Go-Kart design and manufacturing requirements.

### Time Structure for each team (Total 30 minutes per team)

- 1) 20 minutes: Presentation by team: No questions will be asked during presentation. Warning bell will ring after 15 minutes. Please make rehearsals to ensure that presentation will be over in 20 minutes. No extra time will be allowed beyond 20 minutes for any team.
- 2) 10 minutes: Questions by Judges, to be answered by team members.
- 3) There can be **minimum 2** members and **maximum 5** members in the presentation hall, no other member except these would be allowed to enter in the presentation hall.
- 4) Presence of Team Captain OR Vice-Captain is mandatory.
- 5) All the members representing a particular team must come in exactly same dress code (team uniform/t-Shirt/Shirt): This dress code will be unique for that team. It would be suggested, if the team members adorn their institute logo or team logo.

### Presentation Guidelines

- 1) For the first time participants, max number of slides is 14 including the introduction and thank you slide. For the teams who have participated in NKRC 2014-15 (Season-1) will have to add an additional slide (Total 15 including the introduction and thank you slide) mentioning at least 10 significant design changes (engineering point of view) from last year.
- 2) During the presentation, team will be judged, based on their basic understanding of automotive engineering and fundamental principles covering entire vehicle and all important aggregates. Showing extensive design calculations is not necessary at this stage. It is important to show clarity of understanding basic design approach/principles.
- 3) Innovation does not carry any score as such during Virtual round. However, weightage will be given during selection if new innovative feasible ideas are showcased.
- 4) Faculty Advisor, if present, will be silent observer & will not participate in Presentation by team or any discussions with Judges.

## Structure of Presentation: (Slide Sequence)

**Note:** Use Font Style “*Calibri*” and the Font Size as “12 or above”.

- 1) Preliminary Technical Specifications & Overall Performance Targets. 2D / 3D views of the proposed Go-Kart design.
- 2) Knowledge of rulebook – Main dimensions/structural and safety requirements / material of roll cage.
- 3) Design Methodology for Roll Cage, Proposed Engineering process for FEA – load cases and constraints, meshing size, solver used, criteria for Factor of Safety & deformations. Actual FEA results may be presented but not mandatory.
- 4) Ergonomics knowledge related to vehicle cock pit lay out – Driver seating lay out, ease of egress, vision, reach and controls.
- 5) Steering - Design Methodology & considerations for selection of steering system, turning circle, Steering ratio, Turns lock to lock, Steering angles - Inside and outside, Steering wheel diameter, Steering wheel torque etc.
- 6) Brakes - Design Methodology & considerations for brakes, type selection (Disc / drum brakes), brake circuit lay out/actuation, Stopping distance, deceleration, pedal effort etc.
- 7) Power train (Engine to wheel including tyres) & mounting / packaging considerations, Transmission unit-Geared / CVT / Centrifugal clutch / any other, tyre size, Vehicle performance prediction e.g. minimum torque required, Vehicle speed, Acceleration etc.
- 8) Manufacturing processes required for various important vehicle aggregates, machine tools/hand tools and other facilities required. Facilities available in the college workshop.
- 9) Technical parts list for the vehicle (BoM): Overall weight and cost elements/ estimates and financing for the project.
- 10) Team size, Responsibilities assigned (team structure), Project Plan – including Validation test schedule.
- 11) Design verification/Quality process and Validation procedure (Road Tests etc.) plan up to main Event (DVP).
- 12) DFMEA
- 13) This slide will include 10 significant design changes from engineering point of view. (Only for the teams who have participated in previous year’s event)

### **Reporting and decorum Guidelines:**

- 1) All the members of the team have to report and get registered before 11:00 AM on the day of their presentation. All the teams must report at auditorium one hour prior to their slot timing.
- 2) If a team fails to report on the designated time, that team would be evaluated at the end of the complete Morning/Afternoon slot, as applicable. (As per the feasibility of the organizing team)
- 3) The presentation must be in both PowerPoint 2003 and PDF format, mailed at [NKRC@Virtualis.in](mailto:NKRC@Virtualis.in). This should reach us on or before 16th July evening 5pm. Please keep the subject line <Team ID No.> <Team name>. You are also required to bring the complete presentation (in both the formats) in a formatted Pen Drive. Failing which, the teams would face disqualification from the event.

### **All teams must carry the following things and produce them at the time of their registration:**

- 1) College ID card
- 2) Passport size pictures
- 3) An MS Excel Sheet stating the names of the team members the way they want it on the certificates.
- 4) Two hard copies of the presentation, to be presented in front of judges along with the soft copy of the presentation in a formatted pen drive.

It's a humble request to the teams to kindly come to the venue in strictly accordance to their respective slots as allotted.

Please make sure that you confirm to all the above mentioned rules and regulations.

Non Compliance will lead to unwanted actions, including disqualification.

With Warm Regards

Organizing Committee

## VIRTUAL NKRC 2015 (SEASON - 2) SLOT TIMINGS

### DAY-1 (18<sup>th</sup> JULY, 2015)

TIME	Panel-1	Panel-2	Panel-3	Panel-4	Panel-5
<b>09:00-11:00</b>	TEAM REGISTRATION				
<b>09:15-10:15</b>	INAUGURATION				
<b>10:30-11:00</b>	NKRC15-023	NKRC15-034	NKRC15-037	NKRC15-043	NKRC15-048
<b>11:00-11:30</b>	NKRC15-049	NKRC15-062	NKRC15-065	NKRC15-066	NKRC15-017
<b>11:30-12:00</b>	NKRC15-026	NKRC15-027	NKRC15-028	NKRC15-032	NKRC15-033
<b>12:00-12:30</b>	NKRC15-041	NKRC15-045	NKRC15-098	NKRC15-059	NKRC15-088
<b>12:30-01:30</b>	LUNCH				
<b>1:30-2:00</b>	NKRC15-001	NKRC15-002	NKRC15-004	NKRC15-005	NKRC15-006
<b>2:00-2:30</b>	NKRC15-009	NKRC15-008	NKRC15-011	NKRC15-012	NKRC15-014
<b>2:30-3:00</b>	NKRC15-007	NKRC15-010	NKRC15-020	NKRC15-057	NKRC15-084
<b>3:00-3:30</b>	NKRC15-018	NKRC15-003	NKRC15-040	NKRC15-067	NKRC15-100
<b>3:30-4:00</b>	NKRC15-025	NKRC15-082	NKRC15-022	NKRC15-036	NKRC15-054
<b>4:00-4:30</b>	NKRC15-029	NKRC15-038	NKRC15-039	NKRC15-087	NKRC15-077

### DAY-2 (19<sup>th</sup> JULY, 2015)

TIME	Panel-1	Panel-2	Panel-3	Panel-4	Panel-5
<b>09:00-11:00</b>	TEAM REGISTRATION				
<b>10:00-10:30</b>	NKRC15-095	NKRC15-096	NKRC15-076	NKRC15-015	NKRC15-035
<b>10:30-11:00</b>	NKRC15-024	NKRC15-030	NKRC15-031	NKRC15-055	NKRC15-056
<b>11:00-11:30</b>	NKRC15-019	NKRC15-021	NKRC15-051	NKRC15-058	NKRC15-078
<b>11:30-12:00</b>	NKRC15-069	NKRC15-072	NKRC15-073	NKRC15-074	NKRC15-075
<b>12:00-12:30</b>	NKRC15-085	NKRC15-086	NKRC15-091	NKRC15-094	NKRC15-097
<b>12:30-01:30</b>	LUNCH				
<b>1:30-2:00</b>	NKRC15-042	NKRC15-013	NKRC15-044	NKRC15-046	NKRC15-047
<b>2:00-2:30</b>	NKRC15-052	NKRC15-053	NKRC15-060	NKRC15-068	NKRC15-071
<b>2:30-3:00</b>	NKRC15-016	NKRC15-061	NKRC15-064	NKRC15-070	NKRC15-063
<b>3:00-3:30</b>	NKRC15-081	NKRC15-083	NKRC15-050	NKRC15-079	NKRC15-080
<b>3:30-4:00</b>	NKRC15-092	NKRC15-093	NKRC15-089	NKRC15-090	NKRC15-099

**VIKRANT GROUP OF INSTITUTION, Indore**

**COLLEGE DISTANCE FROM VARIOUS TRANSPORT HUBS**

S.No	Location	Distance	Public Conveyance Availability
1	Indore Railway Station & Sarwate Bus Stand	17 km	Indore to MHOW blue bus & I-bus from Madhumilan (near railway station around 0.5 km)
2	Navlakha Bus Stand	12 km	I-bus & Blue Line bus Indore to MHOW
3	Gangwal Bus Stand	13 km	Bus Stand to Rajendra Nagar(use city bus or city van) &From rajendra Nagar I-Bus & Blue bus Indore to MHOW
4	Air Port	30 km	Taxi Pre Paid booth
5	Rau	7 km	I bus & Blue Line bus Indore to MHOW
6	MHOW	4.5 km	Blue Line bus, Taxi & Auto

