

**FORMULA IMPERIAL-2020 (ON-CAMPUS MENTORSHIP)**

### Topics to be covered-

* Background
* Team formation
* Planning, Communication & Review
* Design

## Day 1 (Session 1)

* 1. **Inauguration & Background** 
     + Opening Ceremony
     + Introduction to the event
     + Introduction to the speakers
     + Introduction to Motorsports
     + Workshop Agenda

#### Team Formation

* + - Individual Roles
    - Importance of Team Work
    - Work Distribution amongst the team members

#### Planning Communication & Review

* + - Importance of Planning in the team
    - Student activity & interaction
    - Rectify & Explain proper planning concept
    - Major Planning activity
    - Importance of vision & communication

#### Designing & Software Session

* + - Introduction to Designing Software
    - How to master designing

## Lunch Break – Please note that Session 2 will start sharply at 2 pm

##### Day 1 (Session 2)

* 1. **Designing & Software Session** 
     + Designing of subsystems through software
       - Chassis & Bodyworks
       - Suspension
       - Braking
       - Powertrain
       - Axle & Wheel Assembly
       - Steering Assembly

# Day 2

### Topics

* Procurement
* Vehicle build
* Testing
* Refinement
* Final build & testing
* Final Event management (planning, budgeting, logistics, spares, vehicle tuning, technical inspection clearance, data collection)

***Day 2 (Session 1)***

#### Procurement

* + Understanding the needs
  + Shortlisting & obtaining components

#### Vehicle Building Session

* + Planning & Task allocation
  + Verification of the design
  + Progress check & Efficiency management
  + Prototype Designing
  + Jigs manufacturing, Part fitting, Assembly process
  + Material & Tool Handling, Safety precautions
  + Welding, Painting, Wiring
  + Vehicle Presentation
  + Student Activity

## Lunch Break – Please note that Session 2 will start sharply at 2:00 pm

#### Testing

* + Importance of Testing
  + Proper Testing Methods
  + Design Validation Plan (DVP)
  + Student Activity

#### Refinement

* + Student Interaction & inputs
  + Open Discussion

#### Final Build

* + Documenting the changes
  + Explaining the importance of documentation

#### Final Event

* + Preparation for tech inspection
  + Importance of rulebook considerations
  + What to expect at the final event?
* Sketching Activity
* Online Test
* Electrical & Electronics
* Hybrid Powertrain
* Safety Considerations

1. **Sketching Activity** 
   * Car Design & Structure hand sketch activity
2. **Electrical & Electronics** 
   * Motor Selection
   * Battery Selection
   * Wiring & Connections
   * Electrical Safety

#### Online Test (Rulebook Test)

1. ***Hybrid Powertrain*** 
   1. What do you understand by hybrid?
   2. Types of Hybrids
   3. Developing hybrid Powertrain
   4. Efficiency Management of Hybrid Powertrains

#### Safety & Precautions

1. **Closing Ceremony & Guest Speech**