



**06**  
**MONTHS**

**ONLINE PROGRAM**

**PROFESSIONAL MASTER CERTIFICATION**  
**ELECTRIC VEHICLE DESIGN,**  
**SIMULATION and COMPONENT SELECTION**

Certified By:

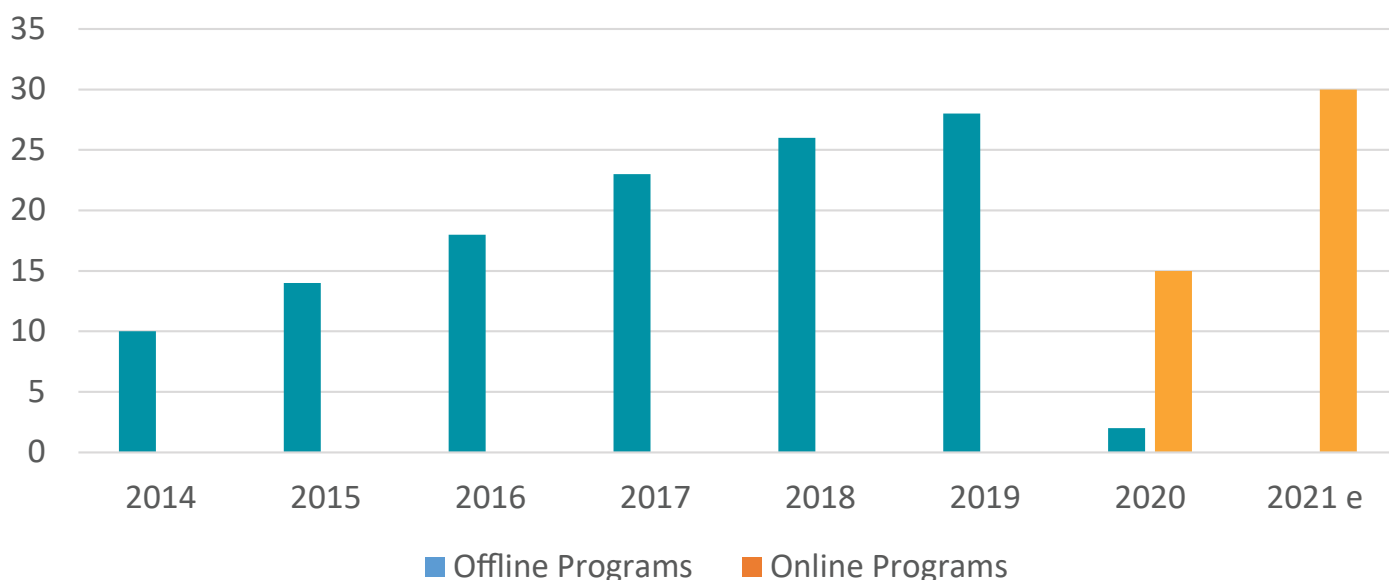


# ABOUT ISIEINDIA

ISIEINDIA is the most popular and favorite E-mobility Motor sports, Education and Research Publication organization in India among engineering institutes and green energy research organization. ISIEINDIA has become one of the epicenter of green energy concept development in India. We are motivating people (Engineers + Future Engineers) to work on New and Renewable Sources of Energy. We provide the platform to new start-ups, Innovative ideas and passionate people, who really want to contribute to society.

We are giving our innovative services to more than 50,000 + peoples. Our services and product have been appreciated and noted by delegates from 22 countries. We are an associate member of FMSCI. We have been awarded by National Youth Award by Ministry of Youth Affairs, and recommended by Ministry of New and Renewable Energy. ISIEINDIA is the 1st society in India which is motivating engineering students to work on commercial green Mobility.

## Program Delivered



The Skill Development Cell of Imperial Society of Innovative Engineers was established in 2015. Since, then we have delivered training in multiple domains of engineering such as - automobile, electric vehicle, computer science, electrical, electronics, etc. Since, its inception we have skilled and re-skilled more than 2.5 lac youths and professionals, helping them launch into a successful career in their desired domain.

SINCE 2015

**2.5** LAC+  
YOUTHS AND PROFESSIONALS  
TRAINED

# ABOUT PROGRAM

Professional Master Certification Programs are long term programs with 6 months of duration. These programs have been designed in order to make you employable and help you achieve that dream job. The courses under this program covers the in depth understandings of the topics covered, with 20+ case studies with mini and major projects.

The lectures will be provided on our Online platform, which can be accessed at any time as per your convenience.

We at ISIEINDIA believe that any lesson learnt is not useful unless you get to apply it in real time. Thus we have placed mini projects through out the course to help you get a proper understanding of the subject. The mini project will be briefed at the beginning of the subject and by the end of it you would have to submit the project. Apart from the mini projects you will also be provided with a major project that you would have to submit at the end of the course.



Placement Assistance



Industry Oriented Curriculum



Live Industrial Projects



Industrial Experts



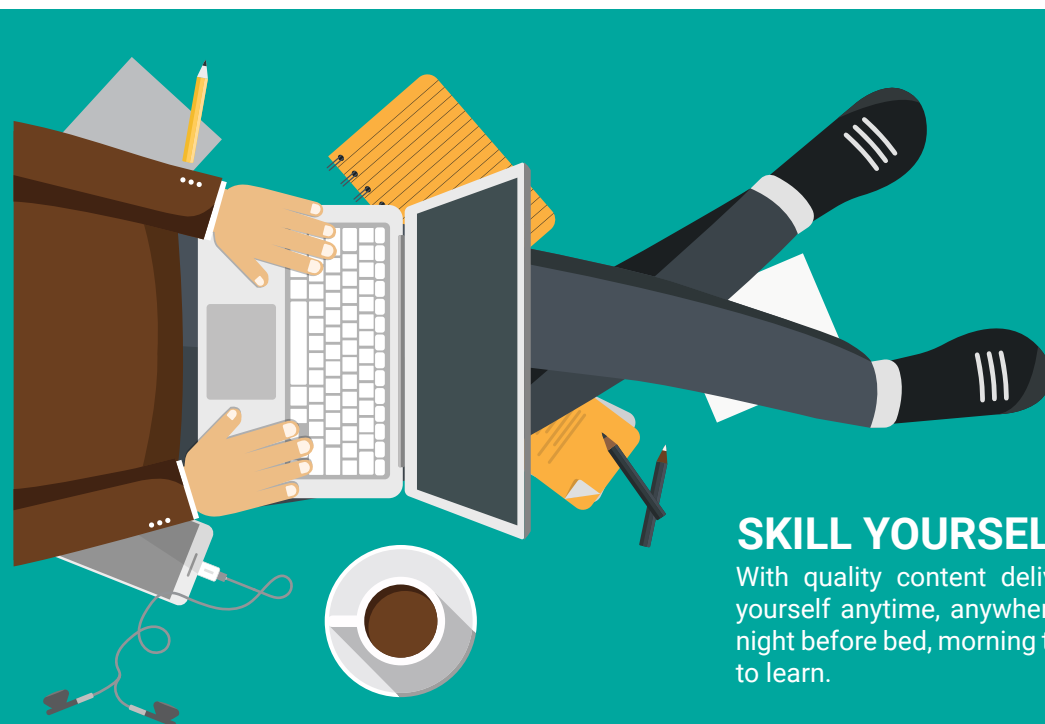
Live Doubt Sessions



Globally Valid Certificate



No Cost EMI



## SKILL YOURSELF ANYTIME, ANYWHERE

With quality content delivered at your screen, you can up-skill yourself anytime, anywhere. It could be during evening coffee, at night before bed, morning tea, during daily transit, you choose when to learn.



# ELECTRIC VEHICLE DESIGN, SIMULATION and COMPONENT SELECTION

The last decade saw significant trends in technology; some of the most significant interest and growth was focused on the EV industry. Once a pipe dream of green technologists, electric vehicles enjoyed tremendous growth in the past decade. As per the recent report by Reuters the upcoming time EV industry is supposed to generate more than 5.8 million new jobs. These will include various profiles like Motor Design, Power Electronics, Production, Services, etc.

In order to be able to fulfill that demand our engineers and graduates would have to be well equipped with knowledge and skill in compliance with Electric Vehicle, and with the Govt. pushing the idea of Make in India, we must have the ability to work on the EV components at R&D level and help achieve the goal.

Keeping this in mind, our experts from the industry have come forward to help us design this upcoming course – “Electric Vehicle Design, Simulation and component Selection”

In this course we will have a detailed discussion over various topics like Market impact of electric vehicles, EV motor design, powertrain calculation, EV design and selection criteria, EV battery Pack charging system and Vehicle simulation and we also added various recent case studies of making this course interactive and highly informative. This course is for those looking for design development of an electric vehicle, in order to come up with a new product for the market. This course will take you through the journey of complete process of design and development of the electric vehicle, and help you lay a perfect pathway for a successful prototype for an EV.

The course is fully Online mode, it includes 06 Subjects for the 200 learning hour. The course includes 20 assignments in total and it also includes assessments after completion of each module, based on which you will be provided with a global certificate.

# COURSE DETAILS

**06**  
SUBJECTS

**100+**  
LECTURE HOURS

**20+**  
CASE STUDIES

**01**  
PROJECT

## SUBJECT 01

### Electrical Vehicle Design and Industry Prospects

About EV Industry and Market Study  
Electric Vehicle Design Principle  
BIW - Hood Design  
BIW - Field View and Roof Design  
BIW - Body and Door Design

## SUBJECT 02

### Electric Vehicle Safety and Crash-worthiness

Introduction to FEA  
Creating a Good Mesh  
Setting up Case Study  
Crashworthiness of Vehicle  
Simulating for Safety

## SUBJECT 03

### Design Aerodynamics

Introduction to Aerodynamics  
Calculating Area  
Drag Calculation  
Drag Simulation

## SUBJECT 04

### Powertrain Design and Selection

Power and Torque Calculation  
Selecting Powertrain  
Motor Types and Design  
Model Based Simulation - Calculate for Energy Consumption  
Motor Simulation for Performance.

## SUBJECT 05

### Energy Storage System Design and Safety

Cell Types and Characteristics  
Battery Pack Design and Cell Sorting  
BMS Design and Architecture  
ESS Communication  
Model Based Simulation - Range Calculation

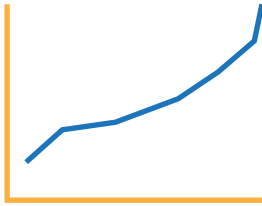
## SUBJECT 06

### Vehicle Homologation and Testing

Introduction to Homologation and Testing  
CMVR Types Approval  
Electrical Machine - Tests and Approval  
Battery Pack - Types and Approvals  
EV Charging Types and Approval



# MAJOR CASE STUDIES



## EV Market Impact

The EV market has grown the most despite of COVID-19 situation in the past one year. In this we take a look at the various parameters affecting the EV market and how the government and manufacturers have joined hands to promote EV.



## Battery placement in EV

The electric vehicle has brought a major change in the way vehicles are being designed. Unlike IC Engine, the NVH requirement is less as well. The placement of the battery pack has also affected the way panels are designed.



## Single speed vs Multi Speed Gearbox

The EVs currently in the market are equipped with single speed gearbox, but there are engineers arguing the fact that multi speed gearbox will be much beneficial. In this we will be discussing the topic and try to understand the difference.



## Battery Charging vs Swapping

When it comes to EV design, it is really important to know which way to choose, battery swapping or charging as it will alter the design. Also take a look at case of Gogoro.

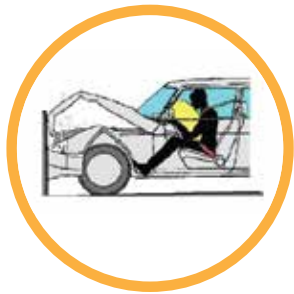
## CASE STUDY

The course is filled with case studies at every unit, explaining real world scenarios and their solutions. The studies mentioned above are the major case studies, associated with which are multiple minor case studies to help you gain more insight into the industry,



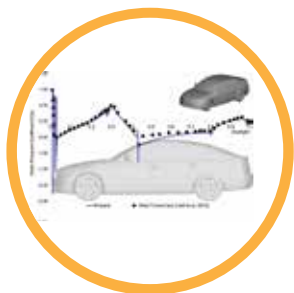
# PROJECTS

CHOOSE ANY ONE PROJECT



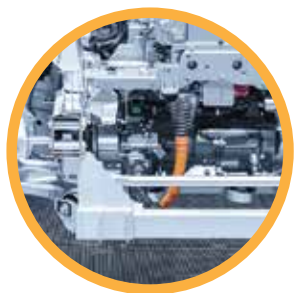
## Design and analyze the Crumple Zone for EV

Observing the designs of the crumple zones of different vehicles, Design the crumple zone of an E-Vehicle and perform the analysis mandatory for crumple zone or crush zone.



## Analyze a 4 Wheeler model for reducing Aerodynamic Drag

Crash Simulation for understanding passenger safety in a vehicle. And study about the crash-worthiness of vehicle along with seat belt and airbag analysis.



## Modeling of 3-W Powertrain

Perform the load calculations, select the type of Drivetrain for max. Efficiency and prepare the CAD model of a 3 wheeler.

## ELIGIBILITY



Graduates/ Post Graduates



Industry Professionals



Entrepreneurs looking for Startups

## PAYMENT OPTIONS

### NO COST EMI

On following Banks Credit Card -

- American Express
- Yes Bank
- Standard Chartered Bank
- RBL Bank
- IndusInd Bank
- CITY Bank
- Axis Bank
- ICICI Bank
- Kotak Bank
- HDFC Bank
- Bank of Baroda



Wallets



Credit/ Debit Card



Net Banking



EMI

# CERTIFICATE

## ISIEINDIA GLOBAL CERTIFICATE



## ASDC CERTIFICATE

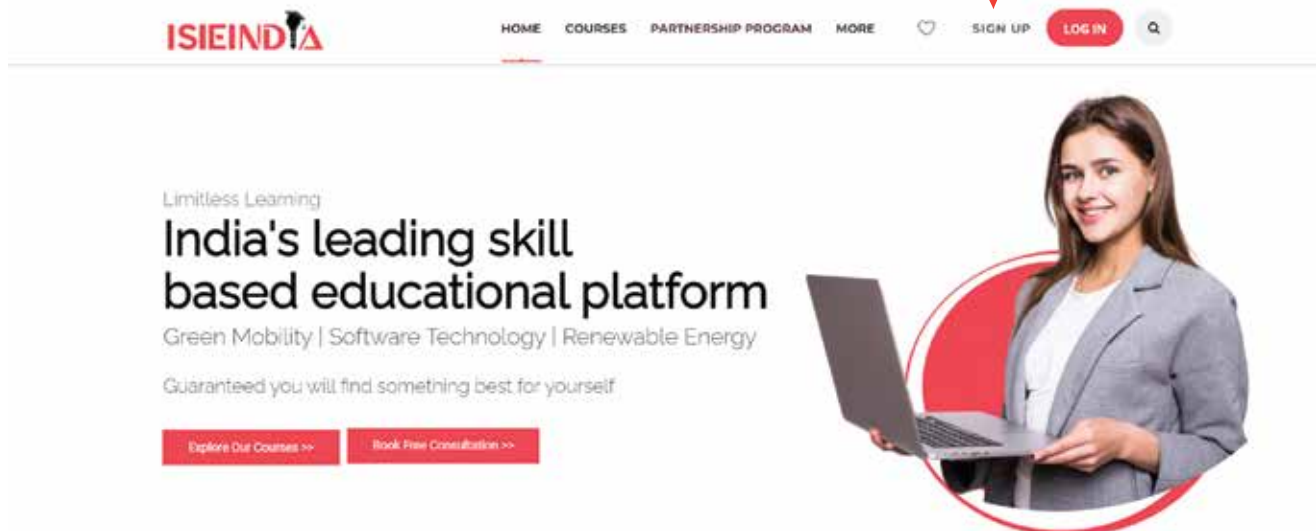


# HOW TO ENROLL

## STEP 1 - Sign up/ Register Yourself

1. Click on the "SIGN UP" button on the top right corner.

Click Here





2. Enter your details in the “Sign Up” panel and click on “Register”.



HOME COURSES PARTNERSHIP PROGRAM MORE



SIGN UP

LOG IN



Login

Form for Login:

USERNAME  
Enter username

PASSWORD  
Enter password

☐ Remember me [Lost Password](#)

LOGIN

Sign Up

Form for Sign Up:

USERNAME  
Enter username

E-MAIL  
Enter your E-mail

PASSWORD  
Enter password

PASSWORD AGAIN  
Confirm password

☐ Register as Instructor

REGISTER

## STEP 2 - Browse and Buy Course

After Login. Click on - Browse Course -> Professional Master Certification Program -> EV

1. Visit the course page and click on learn more.

### Featured Programs for you



#### EV Powertrain Architecture and Energy Storage System

Get 200+ hours learning sessions, masterclass by industry experts & 20+ case studies.  
Exposure to global job opportunities with timely doubt resolution.

Starts On  
Oct 31, 2021

Eligibility  
4 Yrs Proven Academic Term

Download Brochure

Learn More



#### Electric Vehicle Design Simulation and Component Selection

Get 200+ hours learning sessions, masterclass by industry experts & 20+ case studies.  
Exposure to global job opportunities with timely doubt resolution.

Starts On  
Oct 31, 2021

Eligibility  
4 Yrs Proven Academic Term

Download Brochure

Learn More

Click Here



2. Click on "Get Course" to checkout.

The screenshot shows the course page for 'Electric Vehicle Design, Simulation and Component Selection' on the ISIEINDIA website. The page includes a header with navigation links (HOME, COURSES, PARTNERSHIP PROGRAM, MORE) and a user profile (Hey, naveen). The course title is prominently displayed, along with the teacher's name (iseindia) and category (EV). A green 'GET COURSE' button is highlighted with a red circle and an arrow pointing to it, with the handwritten note 'Enroll in Course' next to it. Below the button, the price is shown as ₹59,999.00. To the right of the button, the text 'Enrolled: 64 students' is visible. Further down, the course details are listed: Duration: 6 Month, Lectures: 203, Video: 200+ Hours, and Level: Advanced. The 'About the Program' section describes the course content, including Electrical Vehicle Design, Crashworthiness, Aerodynamics, Powertrain, Energy Storage System Design and Safety and Homologation and Testing, accompanied with various recent case studies to attain the challenges set by the EV industries with Personalized Industry Mentorship, Career Guidance, and Placement Assistance and much more.

3. Enter Coupon Code if you have any. Click on "Proceed to checkout".

The screenshot shows the checkout page. At the top, there is a table with the following columns: Delete, Product name, Price, Quantity, and Total. The table contains one item: 'Electric Vehicle Design, Simulation and Component Selection' with a price of ₹59,999.00, a quantity of 1, and a total of ₹59,999.00. Below the table, there is a 'Coupon code' input field with a red arrow pointing to it and the handwritten note 'Enter Coupon Code (if any)'. Below the input field, the 'Cart totals' section is displayed, showing a subtotal of ₹59,999.00 and a total of ₹59,999.00. At the bottom, there is a blue 'PROCEED TO CHECKOUT' button with a red arrow pointing to it and the handwritten note 'Proceed to Buy the Course'.

#### 4. Update the billing details”.

**Billing details**

First name \*

Last name \*

Company name (optional)

Country / Region \*

India

Street address \*

House number and street name

Apartment, suite, unit, etc. (optional)

Town / City \*

State \*

Uttar Pradesh

Pin \*

Phone \*

Email address \*

**Additional information**


Order notes (optional)

Notes about your order, e.g. special notes for delivery.

Activate W

Go to Settings

#### 5. On the payment page choose the mode of payment, and proceed with payment.



**ISIEINDIA**  
Order 13131  
₹ 59,999

English

+918954111987 | isiehvc@gmail.com

PREFERRED PAYMENT METHODS

EMI - Use your saved cards

CARDS, UPI & MORE

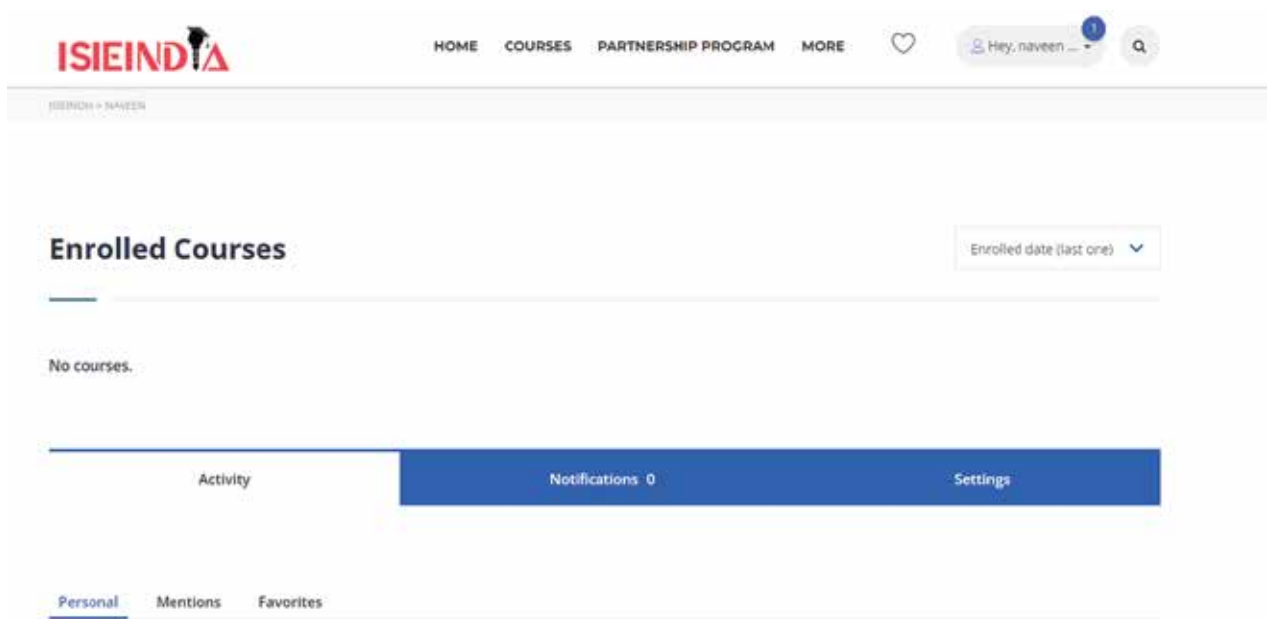
Card  
Visa, MasterCard, RuPay & More

UPI / QR

10 Offers Available

Select

6. Go to My Account -> Enrolled Courses -> Select the course and UP-SKILL Yourself.



# REFER n EARN

UP TO  
**Rs. 5000** /Referral  
IN YOUR BANK ACCOUNT



