ISIEINDIA
CHARGING CAREER

06
MONTHS

ONLINE PROGRAM

PROFESSIONAL MASTER CERTIFICATION

ELECTRIC VEHICLE DESIGN, SIMULATION and COMPONENT SELECTION

Certified By:

ASDC
AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL

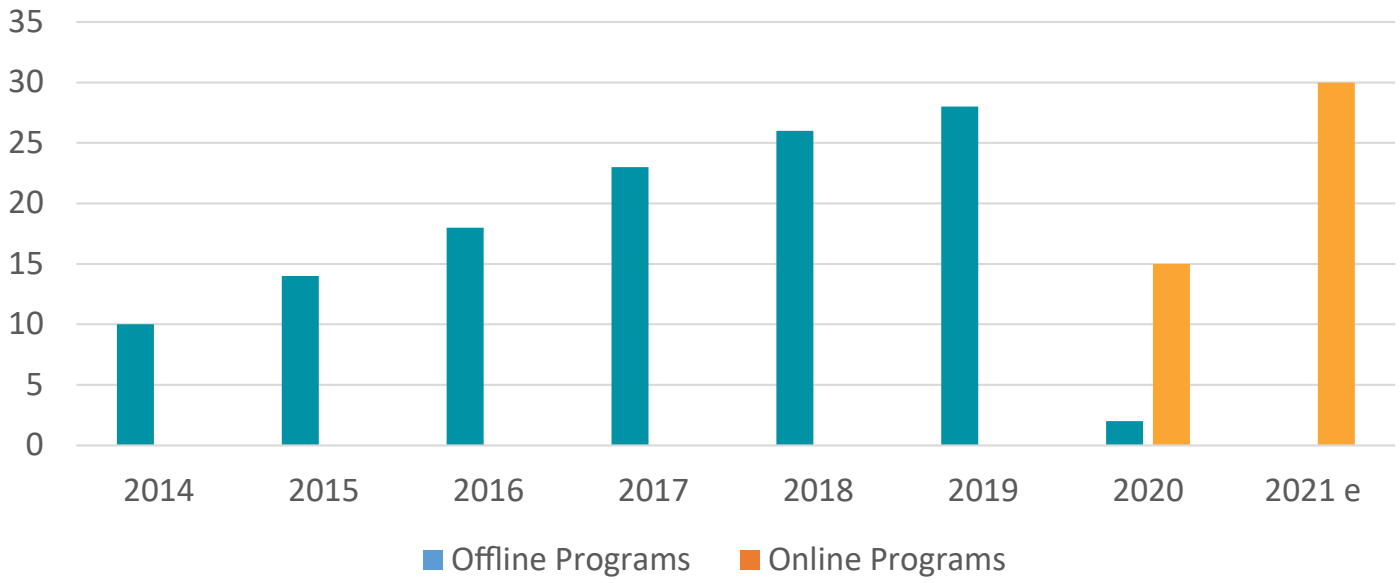
SMEV
SOCIETY OF MANUFACTURERS OF ELECTRIC VEHICLES

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
- Crahsworthiness 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

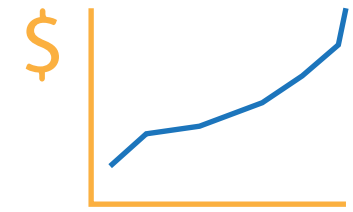
- Cell Types and Characteristics
- Battery Pack Design and Cell Sorting
- BMS Design and Architecture
- ESS Communication
- Model Based Simulation - Range Calculation

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

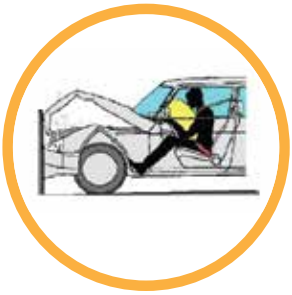
When it comes to EV design, it is really important to know which way to choose, battery swapping or charging as it will alter the design. Also take a look at case of Gogoro.

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,

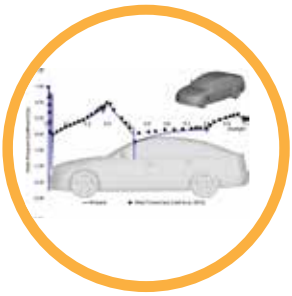
PROJECTS

CHOOSE ANY ONE PROJECT



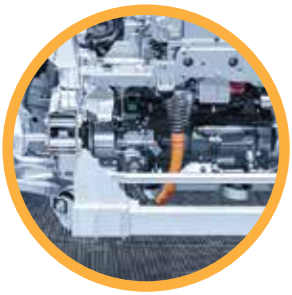
Design and analyze the Crumple Zone for EV

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

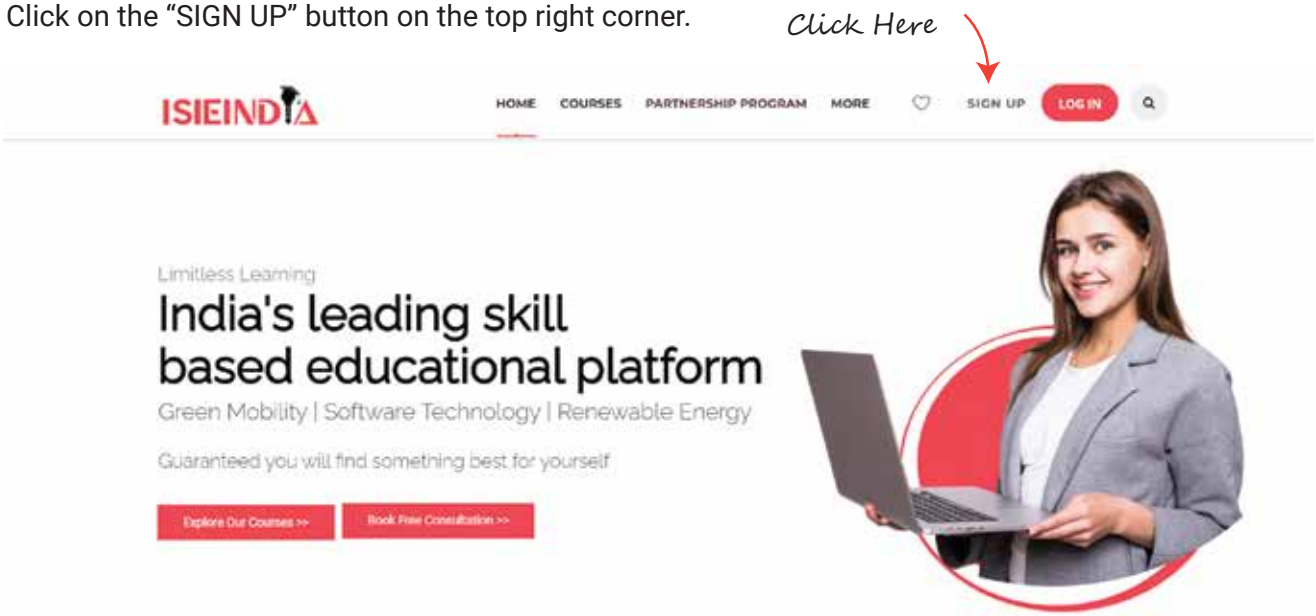
ISIEINDIA GLOBAL CERTIFICATE

ASDC CERTIFICATE

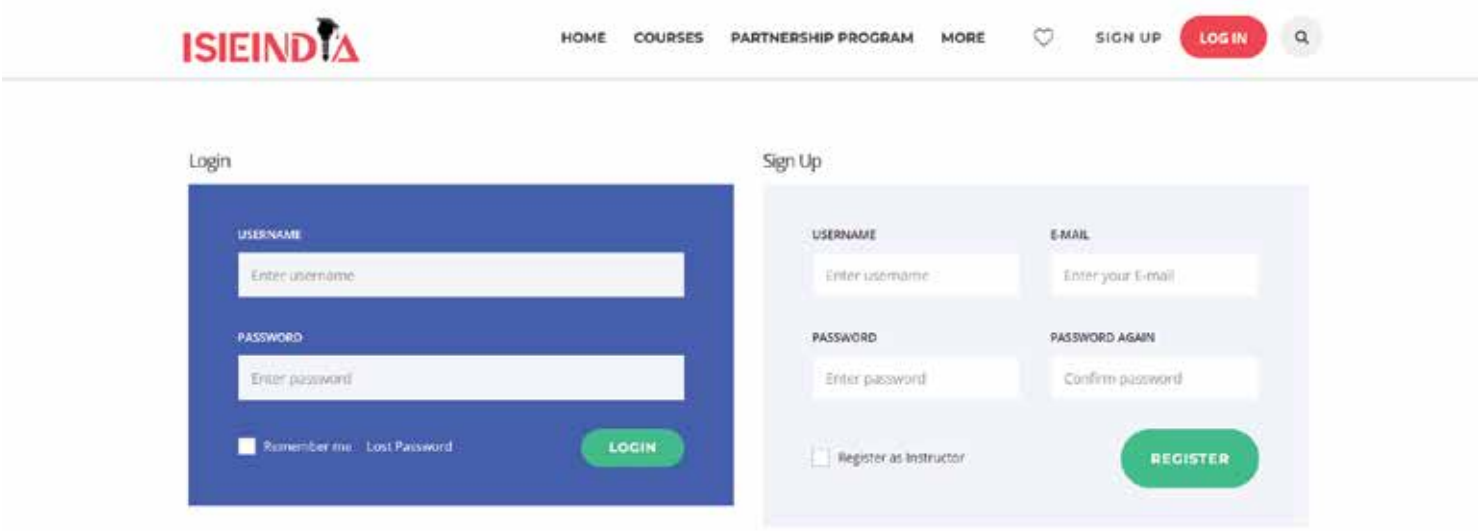
HOW TO ENROLL

STEP 1 - Sign up/ Register Yourself

1. Click on the “SIGN UP” button on the top right corner.



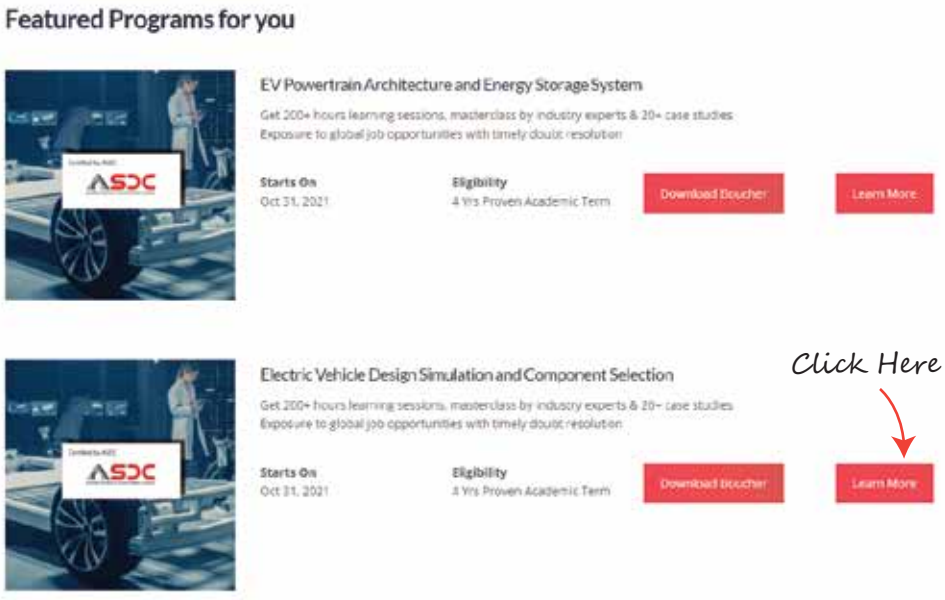
2. Enter your details in the “Sign Up” panel and click on “Register”.



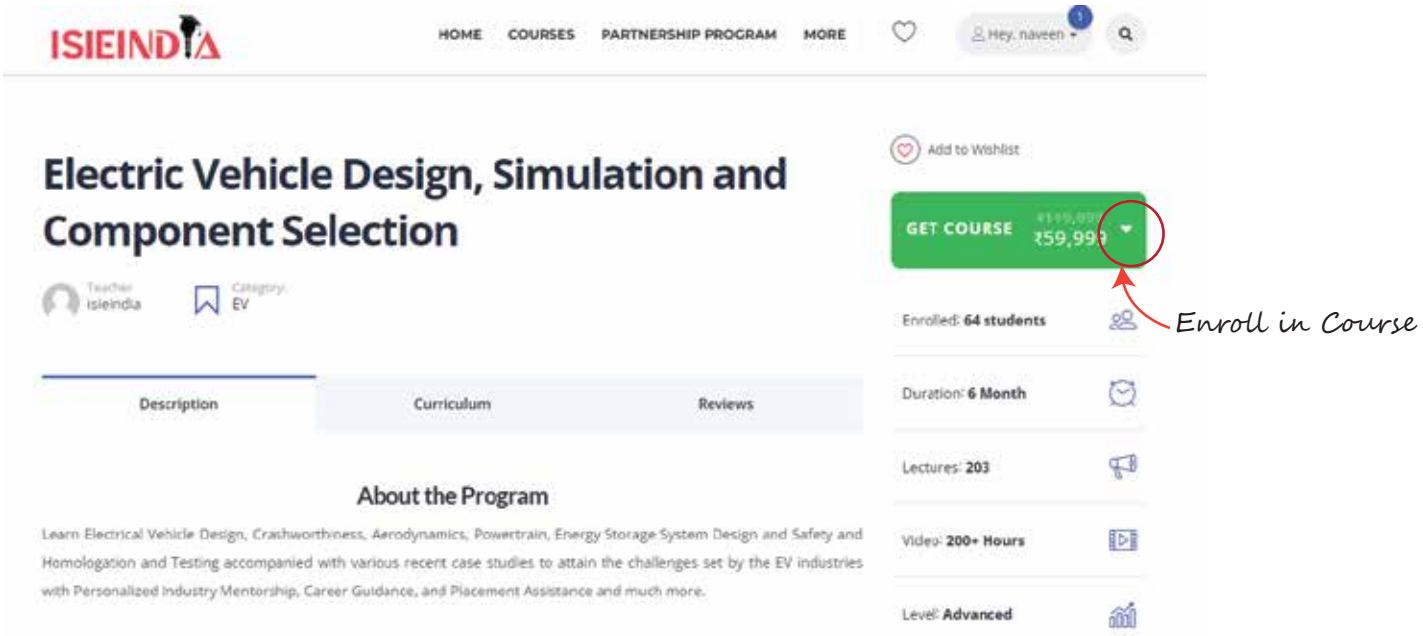
STEP 2 - Browse and Buy Course

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

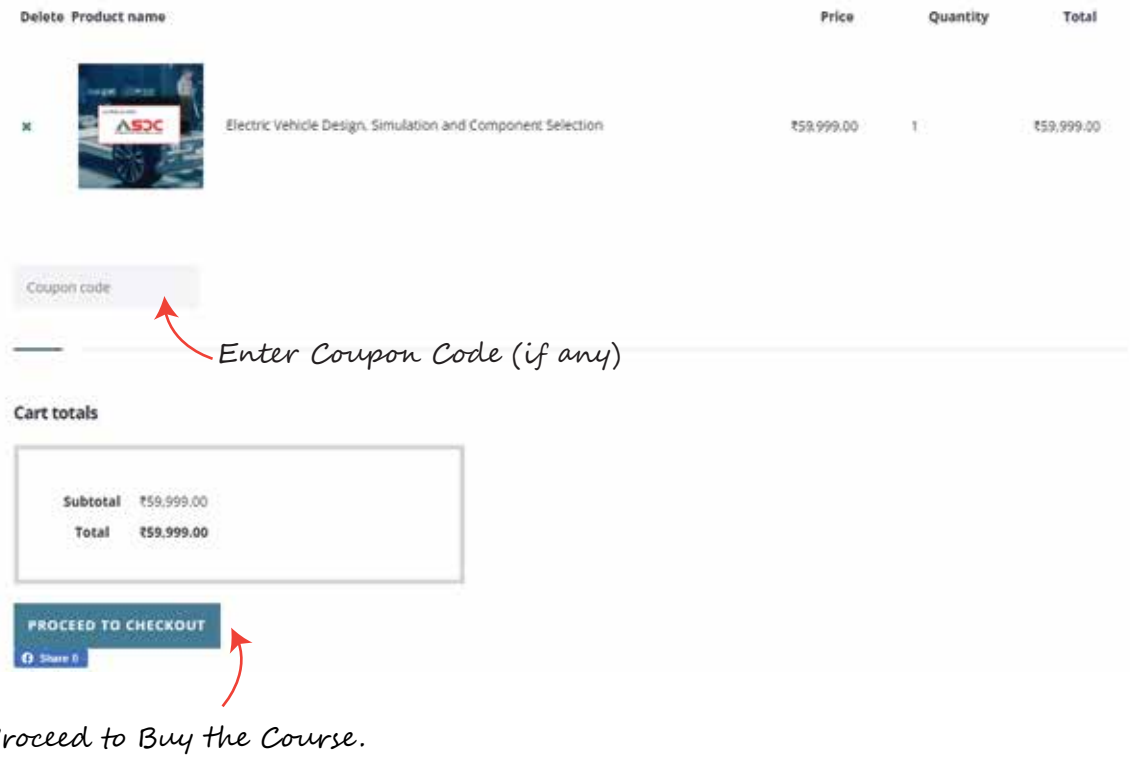
1. Visit the course page and click on learn more.



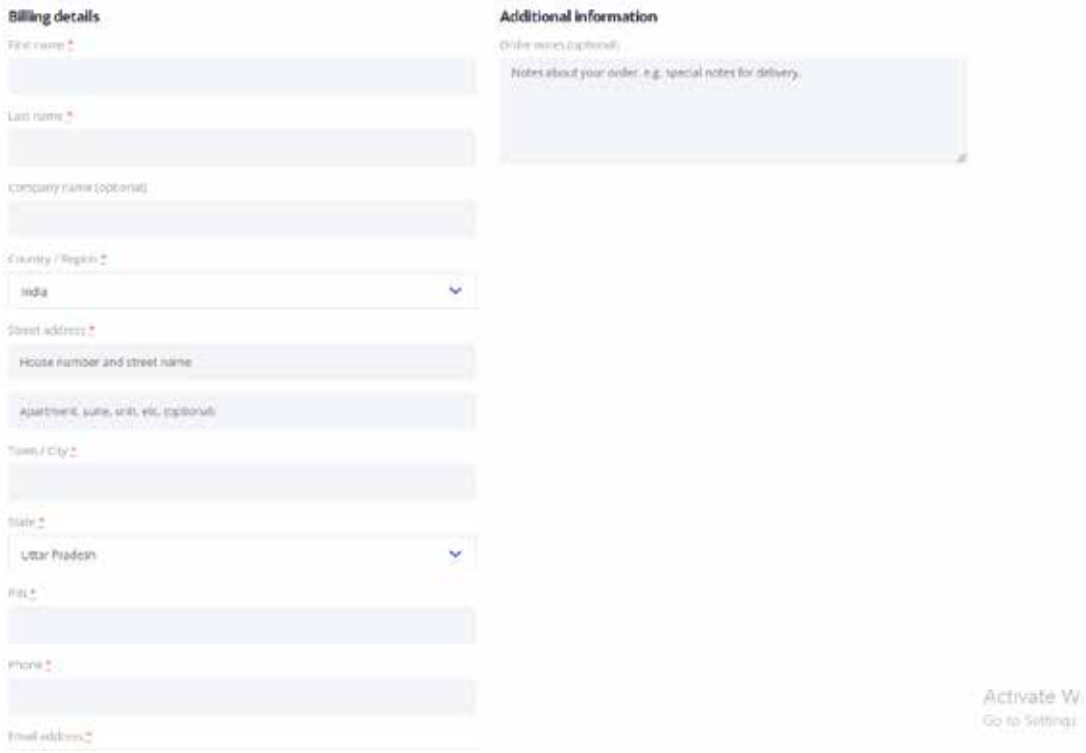
2. Click on “Get Course” to checkout.



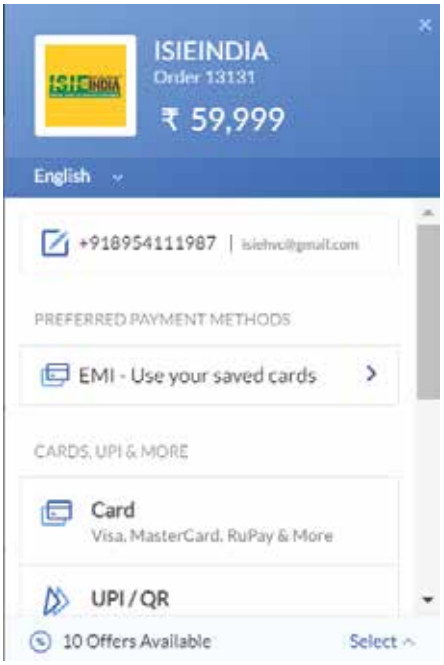
3. Enter Coupon Code if you have any. Click on “Proceed to checkout”.



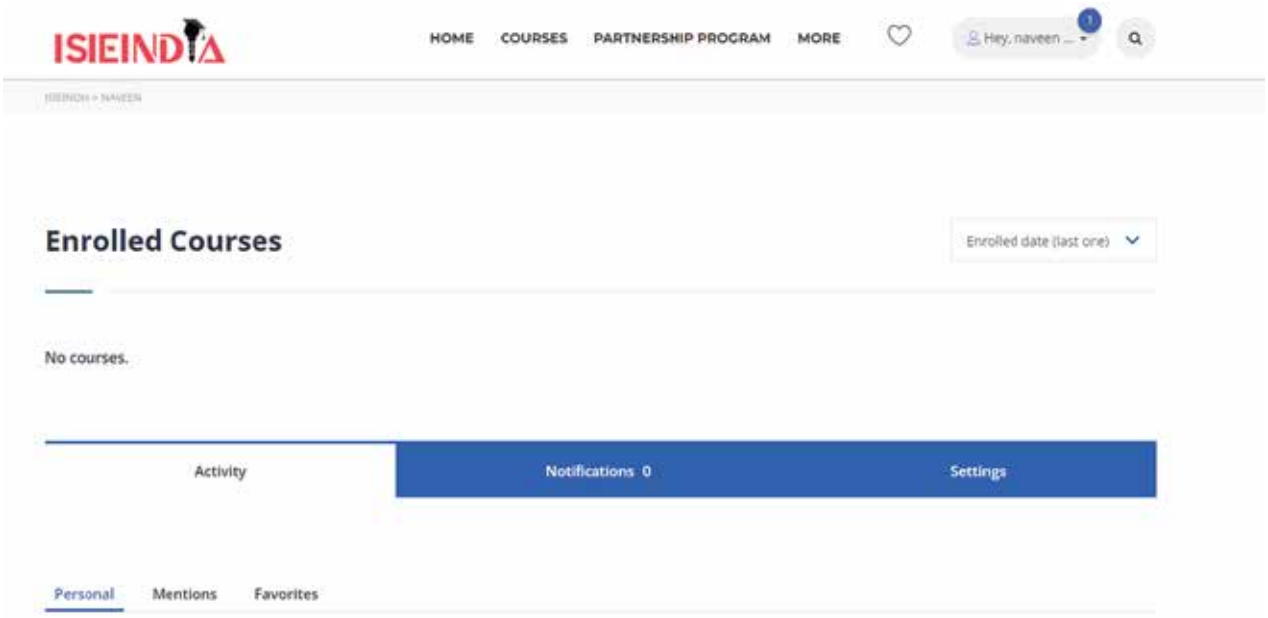
4. Update the billing details”.



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



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



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www.isieindia.com
elearning@isieindia.com
+91-7428723984 | +91-9971621588+