

AN INSIGHT INTO



HANDS ON CONTROLS

eMobility

500 hours of research based learning



The problem

Job crisis + inexperience

Due to COVID-19 a lot of layoffs have taken place and most internships have been rescinded, leaving fresh job entrants with no option but to take recorded online courses.

Those working in product design and FEA domains are willing to switch to controls software but do not know where to start or how to make this switch happen.

THE SOLUTION

HANDS-ON CONTROLS

HOC is a live research based program instead of typical classroom teaching. It provides you with a first hand experience of how a controls software engineering job is done in a company.

It's a mix of internship and a learning platform where you get to work with a live team and a mentor on a project that counts.



HOC IS FOR



STUDENTS

Best suited for this program as you get an invaluable experience before you graduate ME or EE in the coming months/year



GRADUATES

ME or EE graduates with fundamental knowledge of dynamics, controls and MATLAB/SIMULINK



PROFESSIONALS

If you currently don't work in controls software but are willing to make a switch & can spend 500 hours within 3-6 months timeframe

ALL YOU NEED IS...



HOME OFFICE

This will be a remotely held program and we encourage you to work safely from your home office.

COMPUTER

We expect you to use your own computer as you would own the projects that you work on.

INTERNET

The live sessions will be held on Zoom and will need a good internet connection.

SIMULINK

This is bread and butter for a controls software engineer, Simulink and MS office should be on your computer all the time.



COURSE OUTLINE - eMobility

PHASE 1

TRAINING ON CONTROL
SYSTEMS AND
POWERTRAIN MODELLING

PHASE 2

PROJECT DEVELOPMENT

PHASE 3

MIL/SIL TESTING,
VALIDATION AND REPORT
WRITING



COURSE PREVIEW

LEVEL -1

Week 1 & 2 - 6 Sessions

COMPLETION FLAG-

completion of practice excersises

TRAINING & ORIENTATION

- 1) MATLAB/Simulink, Stateflow introduction
- 2) Control Systems Basics
- 3) Road load, Drive cycle and Backward looking modelling
- 4) Assignments

LEVEL - 2

Week 3 to 5 - 9 Sessions

COMPLETION FLAG-

Understanding of vehicle dynamics and powertrain energy management system.

TRAINING

- 1) Powertrain Components Modelling
- 2) Advance Control Systems
- 3) Online Webinars
- 4) Physical Modelling(Simscape)
- 5) Full EV modelling (Forward Looking Model)

COURSE PREVIEW



LEVEL -3

Week 6 to 11 - 18 Sessions

PROJECT

- 1) Project introduction, requirements and deliverables.
- 2) Literature Review.
- 3) Subsystem Development.
- 4) Controller Development.
- 5) System Integration..

COMPLETION FLAG-

Complete modelling, simulation and algorithm design for projects.

LEVEL - 4

Week 12 to end - 8 Sessions

PROJECT

- 1) MIL Functionality testing.
- 2) Validation of generated model.
- 3) Improvements.
- 4) Report Generation.
- 5) Final Presentation.

COMPLETION FLAG-

Testing, analysis and report generation complete.



IMPORTANT TOPICS

BASICS

**Matlab, Simulink &
Stateflow**

**Control System
Theory & Controller
Design**

Physical Modelling

MIY Packages



IMPORTANT TOPICS

POWERTRAIN SYSTEM MODELLING

**Backward Looking
Model/ Forward
looking Model**

**Powertrain
Components
Modelling and Sizing**

**Controller Design
and Selection**

**Full EV/HEV
modelling with
include dynamics**



IMPORTANT TOPICS

MIL TESTING & AUTO CODE GENERATION

**Tests creation for MIL
testing**

**Auto code
generation using
Embedded coder**

**Overview about SIL &
Report writing**

**Application
validation**

Get in Touch

Limited seats only.

ENROLLMENT CONTACT

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