



Bachelor of Science in Electric Vehicle Technology



Level 7 – 60 Credits

Department of Electronic and Mechanical Engineering



Start Date:

21st February 2022



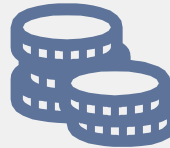
Duration:

11 months
6 hours per week
(Two evenings
plus 5 Practical
Days)



Level:

Level 7
60 Credits



Course Fee:

Unemployed: €0
Employed:
€590



Delivery Mode:

Blended Delivery

Programme Overview

A revolutionary phase shift in the Automotive Industry is occurring with manufacturers committed to phasing out fossil fuel based automotive transport in favour of renewable alternatives. The government has set a target to have 936,000 of the cars registered in Ireland electrified by 2030. Other countries are also following suit with the UK set to phase out new petrol and diesel car sales by 2030 and hybrid sales by 2035.

Ireland is somewhat behind in offering much needed training to technicians working in this area and damage to businesses will ensue if this remains unaddressed.

The course will allow candidates with no previous experience in EV technology to gain the ability to diagnose and repair faults in High Voltage systems and a wider relevant skill set.

Modules will be focused from vehicle system operation and safe working to advanced diagnosis with further modules in Electrical and Mechanical principles to broaden the understanding. ICT will be included to allow technicians to better understand this new prevalent area with business to allow candidates to analyse business expenses and accurately determine how to make maintenance and repair of these new types of vehicle profitable.

Is There a Demand for Graduates with These Skills?

The skill set required to work on EV's is different to internal combustion engine (ICE) cars since Technicians primarily need to understand the safety implications of working on systems with over 400V rather than the conventional 12V systems they are familiar with. The skillset required for EV's is primarily electrical and electronic diagnostics since there exists 50 individual control units on average. The EV also requires software updates so the importance of ICT skills has also increased.



Ireland currently has approximately 2.8 million cars registered, of which a small number are currently electrified. Up-take of electrified vehicles is however rapidly increasing and the Irish government has set a target to have 936,000 electric vehicles registered by 2030.

Ireland as a whole has more remote 'ad-hoc mechanic garages' than anywhere else in the UK and with the advances in EV Technology these businesses have been predicted to become unsustainable. Bosch therefore foresee a move to larger more technologically advanced service centres with highly qualified technical staff being the only way that in independent service sector can survive.



Course Structure

Module Title	Description	Mandatory/Elective	No of ECTS Credits
Automotive Low Voltage and High Voltage Electrical Systems	The purpose of this module is to provide the learner with an understanding of high and low voltage systems. The learner will also gain an appreciation of electrified vehicle system operation and will be able to isolate a high voltage system.	Mandatory	10
IT Systems for Automotive Applications	Modern vehicles have a facility for on-board fault diagnostics and self-reporting (OBD). The purpose of this module is to provide the learner with the ability to diagnose faults specifically associated with electrified vehicles.	Mandatory	10
High Voltage Fault Diagnosis	The purpose of this syllabus is to enhance the learners understanding of the high voltage system operation. The learner will be able to safely remove and install a high voltage component upon completion of this module.	Mandatory	10
Business Leadership and Communications	Construct a business plan. How to motivate staff to achieve results. Analyse business expenses and accurately determine how to make maintenance and repair of these new types of vehicle profitable.	Mandatory	10
Advanced High Voltage Fault Diagnosis	Advanced High Voltage system operation, battery management, thermal management. Conduct Battery Pack Sizing, range and charging calculations and diagnose advanced faults on a high voltage system.	Mandatory	10
Industrial Studies	Operational experience of best practice in an automotive setting. Ascertain floorplan and equipment changes required to facilitate this new vehicle and identify upskilling requirements for service technicians.	Mandatory	10

It will be delivered through blended distance learning in the evenings for approximately 6 hours per week, with learners participating in 5 independent inhouse weekend training days over the duration of the 1-year course.

All classes delivered online will be recorded for learners that may not be able to make live interactive classes.

The course will be available to applicants who meet the following criteria:

- An Advanced Certificate in Motor Mechanic Apprenticeship (level 6) or equivalent.



Application Process

Course Fee

Springboard will cover 90% of the course fees for students who are currently in employment and 100% of the fees for students who are currently unemployed. The student contribution of 10% is €590.



Application Form

Applications can be made via the Springboard website www.springboardcourses.ie. All applicants are required to provide a copy of their C.V., a copy of their highest education qualification certificate and documentary evidence of their eligibility for Springboard including residency (i.e. that they have been ordinarily resident in Ireland or the state EEA/EU/UK/Switzerland for 3 out of the last 5 years). Eligibility criteria for Springboard is available on the Springboard website at <https://springboardcourses.ie/eligibility>

Registration

Registration with LYIT will be in February 2022 through the Department of Admissions. The course will start on 21st of February 2022.



Contact Details



For further information on the course, contact Paddy Hannigan, Head of Department of Electronics and Mechanical Engineering on E-Mail: Paddy.Hannigan@lyit.ie



For further information on applying via Springboard contact the Springboard Office, Letterkenny Institute of Technology on E-Mail: Springboard@lyit.ie