

Name of Course - **VET PLC Programming & Automation Systems**
Level: MQF/EQF level 4 – 6 ECVETS
Duration: Once weekly – 3 months – mornings, afternoons or evenings

Target Group:

For those students / employees who want to enhance their knowledge and level in the PLCs programming systems normally associated in the Industrial sector and desire to obtain a recognized qualification at MQF level 4. This course will help students to acquire valid information and direct hands on specialised controls systems according to industrial needs. It is also useful to those students who are in possession of the Electrical Licence A or Licence B and lack industrial experience. This course is specifically designed to help students to learn and experience direct hands on experience in PLC Programming & Automation Systems. / Electronic Systems

Overall Course Objective:

The overall objective is to give interested students the opportunity to learn about controls used and applied in PLCs systems

By the end of the course students will:

- Have hands on training on PLC'S and automation infrastructure.
- Be capable to carry out tasks, testing, maintenance, evaluations, and decision making regarding controls used in the Electrical Industry.
- Have Ladder logic programming and debugging ability.
- Have Function block diagram programming abilities.
- Have a good understanding regarding automation infrastructure and components, such as sensors, actuators, contactors etc.

Have the ability to utilize fault finding techniques in an industrial environment and have the competency required by the industry

Learning Outcomes for Communication Skillsⁱ for the whole course

- Be competent to follow Automation principles and its components.
- Be competent to follow Ladder programming language.
- Be competent to understand Function Block diagrams.
- Introduction and understanding of programmable logic controllers including its infrastructure and auxiliary attachments and safety as to *IEC 61131* standard.
- Use of different types of industrial sensors including how they work and practical usage.
- Introduction to programming in Ladder logic and FBD both through theory and practise on Automation jigs designed for such practise.
- Understand the importance of engineering safety, using proper safety procedures both in hardware and programming code.

Course Outline

- Understanding electrical science concepts both in theory and in practise.
- Direct and Alternating current differences and use in electrical circuits.
- Engineering and electrical safety, including safety procedures when working on machinery.
- Understanding electronic components and identifying electronic faults.
- Introduction to understanding industrial electronics including sensors, solenoids and starters,
- Introduction to ladder logic programming including hands on experience to practical industrial jigs and automated processes.
- Designing of jigs from a concept to solve practical problems encountered in industrial processes.
- The understanding of engineering drawings, both electrical and mechanical to diagnose, debug and assist in fault finding of industrial automated machinery.

Entry Requirements:

(i) MQF level 3 in Electronics or Mechanical Engineering or Air Conditioning systems or Equivalent or Electrical Licence A.

or

(ii) Ordinary levels in Maths and Physics passing grades between 1 and 5 O levels in Maths and Physics are recognised at level 3 , therefore students who are in possession of a passing grade in Maths and Physics are eligible to further their studies in level 4. These students must be over 18 years old in order to be more mature and ready for this course.

or

(iii) Five years experience in Electrical Controls systems and in possession of Licence A Students who are only in possession of MQF level 1 and 2 or with no qualifications cannot be accepted.

Or

(iv) *VET Electrical Motor Controls technician Course MQF level 4 offered by Tech Courses Centre*

Or

(v) *Award for an assistant Electrician Course level 2 plus a recognized level 3 course in Electrical or Electronics.*

Course Contact Hours as follows -

4 lessons:	<i>12 hours</i>	<i>4 sessions</i>
Test on the first 4 lessons:	<i>4 hours</i>	<i>1 session</i>
Another 4 lessons:	<i>12 hours</i>	<i>4 sessions</i>
Practical test on the next 4 lessons:	<i>4 hours</i>	<i>1 session</i>
Theory test:	<i>2 hours</i>	<i>1 session</i>
2 hours on going assessment & interview	<i>2 hours</i>	<i>1 session</i>

Total Contact Hours:	34 Hours	12 sessions
-----------------------------	-----------------	--------------------

Industrial visits:	12 hours (apart from contact hours)
Assessment Hours:	12 hours (included in the contact hours)
Self-Study Hours:	80 hours
Total Number of sessions:	12

General Assessment policy and procedures:

Practical Testing 55%, Portfolio 15%, Theoretical Test 30%

Passing Rate – 70%

Distinction – 90% to 100%

Merit – 75% to 89%

Pass - 70% to 74%

Entry Minimum Requirements:

- O levels in Maths and Physics or
- O level in Maths and attended a full Licence A course **or**
- O level in Physics / similar course and attended a full the Licence A course **or**
- Licence A **or**
- Licence B **or**
- Degree in Engineering (Mech or Elec) **or**
- Diploma in Engineering (Mech or Elec) **or**
- Tech Courses Centre passes in MQF LEVEL 2 in the Award for Asst Electricians
and MQF level 3 Electrical and Electronics Installations

Total Number of ECTS/ECVETs of the module/unit
ECTS/ECVETs – 6

Head of Tech Courses Centre

Robert Magro

Contact Number 99860897

E mail: techcoursescentre@gmail.com

Cost – Euro 370 including noted and material used for practise