Beginners to Advanced Courses

- FETAC Accredited Provider
- City & Guilds Approved Training Centres





HI-TECH TRAINING

TRAIN FOR SUCCESS

Introduction

Hi-Tech Training is a long established Training Organisation which helps ambitious people to move up into higher paid, more secure jobs in the fields of Analogue and Digital Electronics, Alarm Installation, CCTV, Access Control, IT and Alternative Energy technologies. Whether you are a newcomer to the field or already working in these industries, Hi-Tech Training can provide you with the specialised training so essential for success. The expert and personal guidance by fully qualified tutors is the key to our outstanding performance in the technical field. You study the subjects you enjoy, receive formal training certificates so that you are ready for that better job, better pay.

All courses are very practically orientated and most incorporate approximately 50% practical "Hands-On" training. We have training centres in Dublin and Cork and also conduct courses in Limerick, Kilkenny, Galway, Waterford and in company. We have vast experience of running technical courses to very high standards. We continually update our training methods, equipment and course syllabi and introduce new courses in order to provide participants with the skills and knowledge demanded by today's ever changing technology. All additional courses are available as a supplement to this brochure or through our website.

CITY & GUILDS OF LONDON INSTITUTE

A number of our training courses offer qualifications issued by the City & Guilds of London Institute. The City & Guilds are and old prestigious examining body operating under Royal Charter. Their qualifications are recognised world wide within the technical industries and therefore are extremely beneficial when seeking employment. Both of our training centres are City & Guilds approved.

FETAC

FETAC is the National awarding body for further education and training in Ireland. The Further Education and Training Awards Council (FETAC) gives people the opportunity to gain recognition for learning in education or training centres, in the work place and in the community. FETAC was set up as a statutory body on 11th June 2001 by the Minister for Education and Science under the Qualifications (Education & Training) Act, 1999. FETAC has responsibility for making awards previously made by BIM, Fáilte Ireland, CERT, FÁS, NCVA and Teagasc and has made over 1,000,000 awards to date.
FETAC's mission is to make quality assured awards in accordance with national standards within the national framework, creating opportunities for all learners in further education and training to have their achievements recognised and providing access to systematic progression pathways.

HI-TECH TRAINING AND FETAC

Hi-Tech Training is registered with FETAC to offer programmes leading to FETAC awards in the National Framework of Qualifications (FETAC Centre Registration Number 38185D).
People who successfully complete individual Hi-Tech Training courses receive Hi-Tech Training qualifications for each course successfully completed. On successful completion of a number of specific Hi-Tech Training courses, participants may progress further to obtain FETAC National Awards.
The following FETAC Level 5 Component Awards can be obtained through Hi-Tech Training: - **Renewable Energy Production Systems (N23003), Intruder Alarm & Access Control (C20161) and CCTV & Lighting (5N1771)**
For further information, see page 5 of this brochure.

FÁS

A number of our training courses are approved by FÁS, the Irish Training and Development Authority, for grant aid. Hi-Tech Training's approved Training Programmes and Trainers have been placed on the FÁS/EI National Register of Trainers. The registration number of Hi-Tech Training is 901242.
Please mention this to your employer if your company is sponsoring your course.
For further details, please contact Hi-Tech Training.

STAFF

Highly qualified, dedicated and experienced personnel run the administrative and technical departments of Hi-Tech Training. Our instructors are extremely capable and have extensive technical backgrounds and teaching experience. They make every effort to make your training course a success. Class numbers are kept intentionally small to provide personal individual attention whenever possible.

TEACHING METHODS

Our teaching methods are modern and effective. We provide information transfer by the correct implementation of Lectures, Practical Demonstrations, Course Materials and "Hands-On" exercises. These training methods provide the participant with a greater grasp of the practical aspects of these technical subjects and provide them with the experience and confidence that are so essential to obtain employment in the technical fields.

EQUIPMENT

We use the most up-to-date "State of the Art" equipment on all courses. The use of this equipment gives participants a greater insight into what is expected of them in the working environment. It provides them with the skills and knowledge to correctly utilise the technical equipment with confidence in the workplace. Our equipment is continually updated as the changing technology demands.

MATERIALS INCLUDED IN COURSE FEE

Use of all relevant training equipment and all Hi-Tech Training examination fees are included. City & Guilds of London Institute examination fees and FETAC examination administration fee are not included. **For details of present examination and course fees please see separate leaflet.**

HI-TECH TRAINING EXAMINATIONS

On successful completion of an examination offered by Hi-Tech Training, participants will receive a Certificate of Training stating the result obtained, be it Pass, Credit or Distinction.
Pass = 50%-64%, **Credit** = 65%-79%, **Distinction** = 80%-100%.

ENTRY REQUIREMENTS

No experience is necessary to attend any of our Level 1 training courses. The main factor is that you have an interest in your subject (if only in a general sense) and would be prepared to dedicate approximately 4-6 hours study each week in addition to time spent on the training course.
After successful completion of a Level 1 course (or on having equivalent qualifications or experience), it is possible to progress to higher level courses as indicated in the "Course Entry Requirements Table".

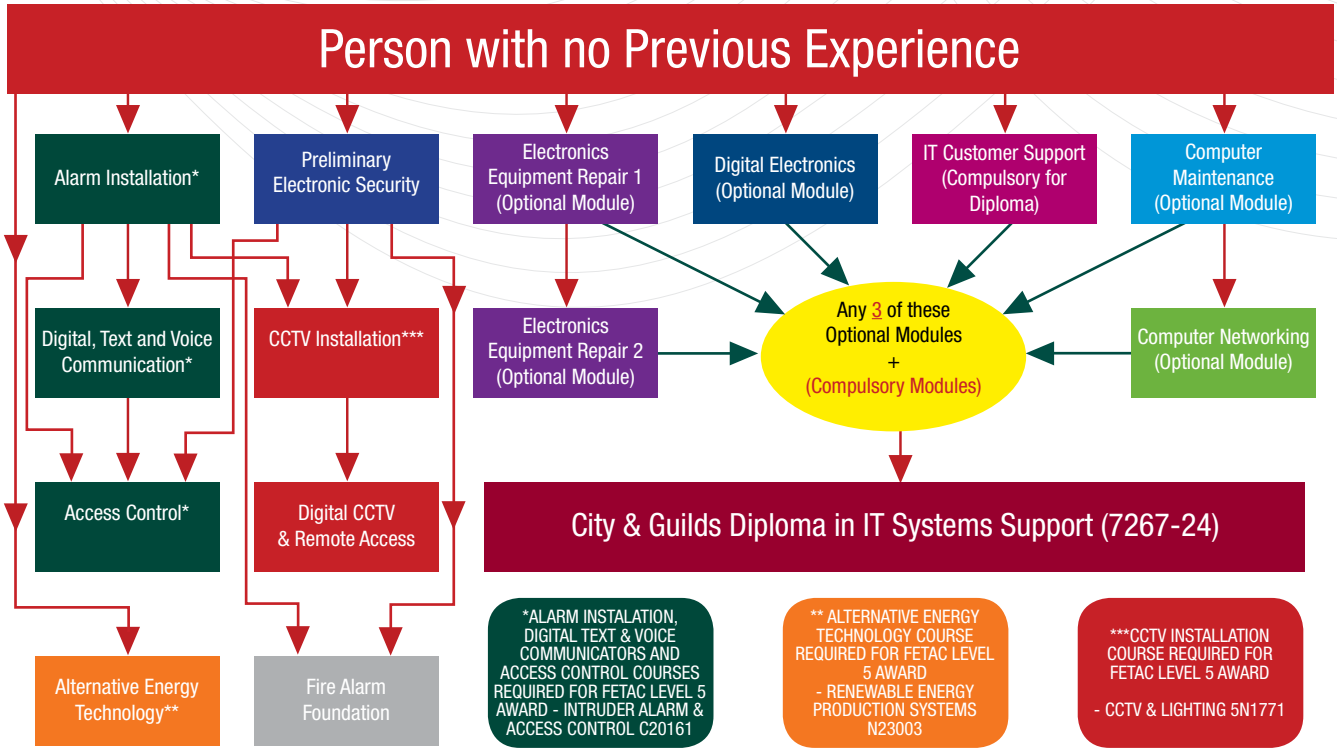
WHICH COURSE TO APPLY FOR

Further details of the course timetables, syllabi, etc. are outlined throughout the Brochure or on our website **www.hitechtraining.ie**. In general it is advisable to study the subject you have an interest in and which will offer you good job prospects. We offer beginners to advanced courses so it is possible to progress to a very high level of competency. If you have any queries regarding the level and suitability of the courses, please contact us. We will be happy to advise you.

HOW TO ENROLE

To enrole, please complete the application form and forward it to us with the relevant deposit at your earliest convenience. Alternatively, you may enrole through our website www.hitechtraining.ie Early enrolement is strongly recommended due to the limited availability of course places.

COURSE ENTRY REQUIREMENTS TABLE



Please note: - The above table acts as a guide only. Entry requirements to a particular course may vary according to an individual's aptitude, experience, qualifications, etc.

FETAC Awards Options

About FETAC

FETAC is the National awarding body for further education and training in Ireland. The Further Education and Training Awards Council (FETAC) gives people the opportunity to gain recognition for learning in education or training centres, in the work place and in the community. FETAC was set up as a statutory body on 11th June 2001 by the Minister for Education and Science under th e Qualifications (Education & Training) Act, 1999.
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People who successfully complete individual Hi-Tech Training courses receive Hi-Tech Training qualifications for each course successfully completed. On successful completion of a number of specific Hi-Tech Training courses, participants may progress further to obtain FETAC National awards.

FETAC ASSESSMENTS

Assessments take place through practical skills demonstration and a theory based examination. On successful completion of both assessments facilitated by Hi-Tech Training, participants will receive a FETAC Award.

The FETAC Award will state the result obtained, be it Pass, Merit or Distinction.

Pass	=	50%-64%,
Merit	=	65%-79%,
Distinction	=	80%-100%.

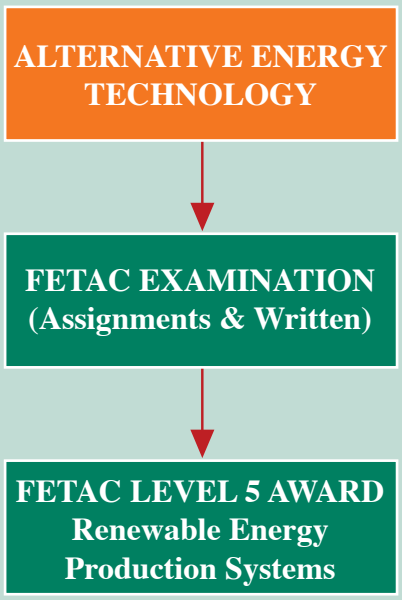
FETAC - LEVEL 5 AWARD - Renewable Energy Production Systems (N23003)

REQUIREMENTS

In order to meet the FETAC syllabus requirements the Renewable Energy Production Systems FETAC Level 5 Component Award, participants must successfully complete the following Hi-Tech Training Course

- Alternative Energy Technology

On successful completion of this course, participants may undertake a FETAC examination facilitated by Hi-Tech Training and on successful completion of same become eligible to receive the FETAC National Award - Renewable Energy Production Systems FETAC Level 5 Component.



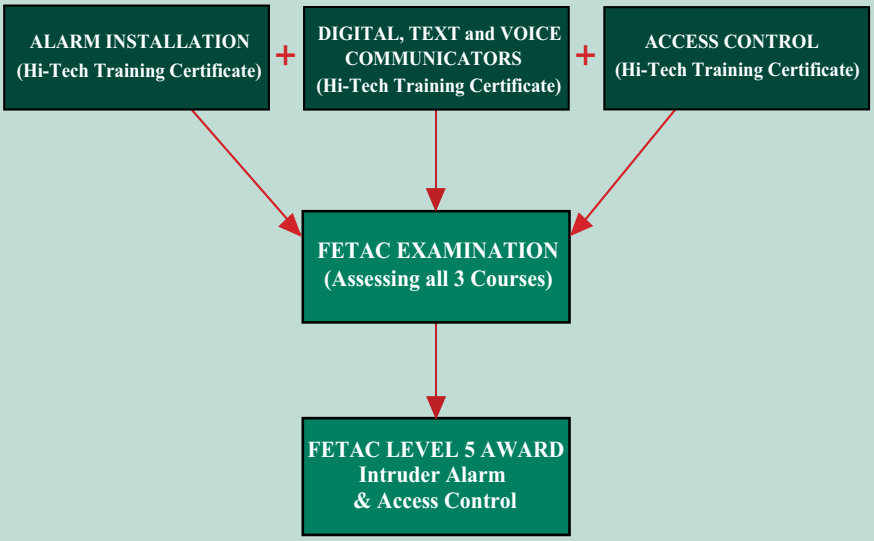
FETAC - LEVEL 5 AWARD – Intruder Alarm and Access Control (C20161)

REQUIREMENTS

In order to meet the FETAC syllabus requirements for the Intruder Alarm and Access Control FETAC Level 5 Component award, participants must successfully complete the following 3 Hi-Tech Training Courses:-

- Alarm Installation
- Digital, Text & Voice Communicators
- Access Control

On successful completion of these courses, participants may undertake a FETAC examination facilitated by Hi-Tech Training and on successful completion of same become eligible to receive the FETAC National Award - Intruder Alarm and Access Control FETAC Level 5 Component. This award can be used as one of the criteria for membership of the Security Institute of Ireland.



FETAC - LEVEL 5 AWARD - CCTV & Lighting (5N1771)

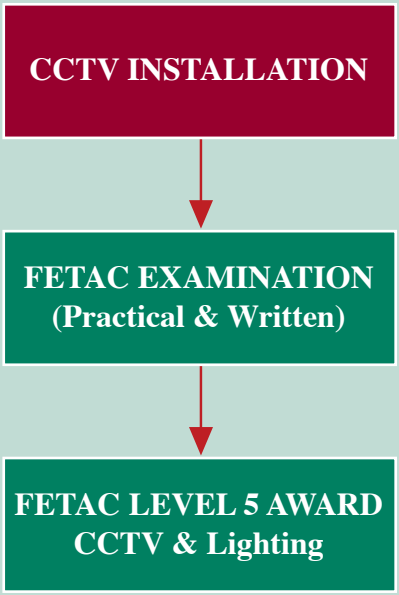
REQUIREMENTS

In order to meet the FETAC syllabus requirements for the CCTV & Lighting FETAC Level 5 Component Award, participants must successfully complete the following Hi-Tech Training Course

- CCTV Installation

On successful completion of this course, participants may undertake a FETAC examination facilitated by Hi-Tech Training and on successful completion of same become eligible to receive the FETAC National Award - CCTV & Lighting FETAC Level 5 Component. This award can be used as one of the criteria for membership of the Security Institute of Ireland.

*People with no previous electrical/electronics experience or training may need to attend an additional Preliminary Electronic Security 1 day Course. See Course Entry Requirements Table for further details on page 3 of Hi-Tech Training hardcopy brochure)



Alternative Energy Technology

Saving the planet may not seem like the quickest path to riches. Yet there are plenty of investors betting that sustainable energy will make them lots of money. Already the sector is fast becoming a multibillion-euro industry, giving companies the chance to boost their profit margins and help fight climate change at the same time. Taking advantage of this investment revolution, a wave of European firms has pioneered alternative energy technology to help make Europe the world leader in reducing carbon emissions. The course is designed to be of benefit to people either working or intending to work as: - Alternative Energy Installers OR anyone just wishing to gain a practical knowledge of Practical Alternative Energy Systems.

AIM: -

This practically based course is designed to give participants an understanding of alternative energy options and provide them with the practical knowledge and skills to build solar to electric and wind to electric systems at a foundation level.

QUALIFICATIONS: -

1. On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate stating the Grade obtained, be it: PASS, CREDIT or DISTINCTION. PASS = 50% - 64%. CREDIT = 65 - 79%. DISTINCTION = 80% - 100%.
2. On completion of the Course and successfully completing 1 written examination and 2 FETAC specified assignments, the participant will receive the FETAC - Level 5 Award – Renewable Energy Production Systems (N23003).

DURATION: -

30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings.

FETAC
Further Education and Training Awards Council
Comhairle na nDámhachtainí Breisoideachais agus Oiliúna

LEARNING OBJECTIVES: -

- Consider the advantages and disadvantages of the different alternative energy systems
- Demonstrate a knowledge of the operation of a wide range of electronic components and circuits and their applications in Alternative Energy Systems
- Become competent in the correct use of electronic test and measurement equipment such as Analogue and Digital Multimeters
- Build a simple photovoltaic to electric system
- Build a simple wind to electric system
- Effectively connect up, test and fault-find system elements

COURSE CONTENT: -

- Alternative Energy: – Introduction, terminology, types and applications.
- Using technology to reduce CO2 emissions and energy costs.
- Advantages and disadvantages of the various types of alternative energy including Solar Thermal Energy, Hydro Energy, Biomass Energy, Geothermal Heating.
- Sustainability Issues, Health & Safety and Environmental precautions.
- Introduction to Electronics: - Electric Current, OHMS Law, Insulation, Conduction, Kilowatt hours, and related power calculations and formulae. Fuses and trip switches. Wiring techniques. Practical uses of commonly used components e.g. diodes, relays, transformers.
- Test and measurement equipment such as Analogue and Digital Multimeters, Battery Test Meters.
- Inverters: - types, uses, ratings, calculations, connections.
- Calculating loads and selecting battery ampere hour capacity.
- Construct, test and fault find a Wind energy harnessing system.
- Construct, test and fault find a Solar energy harnessing system.
- Determine using online data sources the effective performance of systems at different global locations and seasonal variations.
- Sustainable and Energy Efficient Building Design.
- Relevant standards and issues, Changing technology and keeping updated.

PLEASE NOTE: - A large percentage of the course timetable is allocated to building, setting-up, testing and trouble-shooting faults using core elements of Alternative Energy Systems. At the end of the course an interested and hardworking participant will have a foundation knowledge of what practical alternative energy is all about. Each module of the training program is backed-up by practical exercises, demonstrations and course materials. These training methods give the participant a greater grasp of the practical aspects of the industry and provides them with the “Hands- On” experience and confidence which are so essential for success

Practical “Hands-On” experience: - 50% approx

Alarm Installation

This course is designed to teach participants how to install an intruder alarm system in domestic, commercial or industrial premises to the recommended EN50131 Standard. Other security-orientated courses available are Digital, Text and Voice Communicators, Access Control, Fire Alarm Foundation, Preliminary Electronic Security and CCTV (CCTV Installation and Digital CCTV & Remote Access).

ALARM INSTALLATION

AIM: - To teach participants how to install and service Intruder Alarm Systems.

QUALIFICATION: - On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate.

DURATION: - 30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Understand basic electrical theory including OHM's Law and associated series and parallel circuits.
- Select battery to comply with EN50131 standards requirements.
- Wire the alarm control panel to an assortment of detection and signalling devices.
- Wire remote keypads to the alarm control panel.
- Programme and setup Hardwired, Wireless and Hybrid systems.
- Know different zone types and their uses.
- Trouble shooting and testing a system.

COURSE CONTENT: -

- Introduction to electrical circuits, current, resistance, insulation and conduction.
- Ohm's law. Basic circuits analysis. Fuses and trip Switches. Wiring techniques.
- Batteries: - Testing and choosing battery to comply with standard's requirements.
- Control panels: - Standard, Wireless and Hybrid systems. General operation. Local and remote keypads. Programming techniques and use of engineer event log.
- Zones: - Alarm, tamper, exit/entry, access, personal attack, exit/entry delay, etc.
- Detection devices: - Magnetic reed contacts, pressure mats, personal attack buttons, inertia shock sensors, analysing devices, infrared detectors, microwave detectors, hybrid detectors.
- Signalling devices: - Siren, bell, strobe light, exit/entry buzzer & Self-activating bell (S.A.B.)
- Introduction to Security lighting, Digital, Text and Voice Communicators and CCTV.
- European EN50131 recommended standard for Installation of security alarm equipment.
- Trouble shooting: - use of digital multimeter, how to "walk-test" and "soak-test" zones.
- Marketing and selling your product – hints and tips.

In order to simulate a practical installation in a building, each participant will wire up a number of different Alarm Control Panels to typical auxiliary equipment such as strobe lights, sirens, reed contacts, inertia sensors, infra-red detectors, Self Activating Bell units, etc. This practical work largely contributes to the course's high credibility.

Practical "Hands-On" experience: - 50% approx.

Digital, Text & Voice Communicators

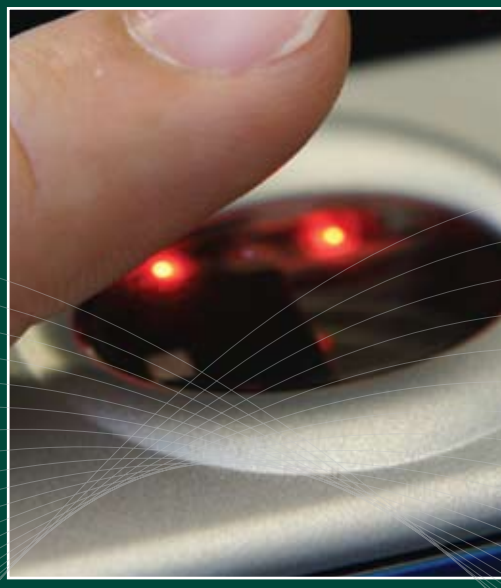
AIM: - To provide participants with the skills required to connect Digital, Text and Voice Communicators to an Alarm Control Panel for transmission of Digital status signals via the telephone line or GSM Network.

QUALIFICATION: - A Certificate of course completion will be issued to participants who have fully attended the course.

Duration: - 6 hours (2 x 3 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Connect and programme a Digital Communicator.
- Connect and programme a Text (SMS) Communicator.
- Connect and programme a Voice Communicator.
- Be aware of regulatory requirements and communication protocols.
- Be aware of design considerations for alarm installations using digital communicators.



COURSE CONTENT: -

- Review of microprocessor control panel.
- The Digital Communicator – Slow and fast formats.
- Digital, Text and Voice Communicator triggering methods.
- Connecting and programming the Communicators.
- IS 228 requirements for monitoring stations and Digital Communicators.
- Stand Alone and Integrated Communicators. Communication protocols.
- Garda Response Policy, Verification Technology and EN50131 requirements.
- Central Stations' verification of alarm signals.
- Specific design considerations for alarm systems using Digital Communicators.

Practical "Hands-On" experience: - 50% approx.

Access Control

AIM: - This practically based course is designed to give participants a practical knowledge of the operation and installation of Access Control Systems at a foundation level.

QUALIFICATION: - On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate.
Please note: **-** Access Control course participants who have attended the Hi-Tech Training courses in Alarm Installation and Digital, Text & Voice Communicators may sit the FETAC written examination leading to FETAC - Level 5 Component Award – Intruder Alarm & Access Control (C20161) on the last training session of this course.

DURATION: - 18 hours (3 x 6 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Understand the fundamental elements that make up an Access Control System
- Fit the principal components of stand-alone and networked systems
- Connect and programme a card, keypad and proximity stand alone system
- Effectively connect up, test and fault-find system elements
- Be aware of the issues associated with Access Control Systems
- Have an awareness of the changing technology and it's impact on the industry

COURSE CONTENT: -

- Access Control Systems: – Introduction, principles, uses and applications.
- Elements of a basic and advanced, insecure and secure Access systems.
- Stages of Access Control: - Identification, Decision, Action
- Control Components: - Reader, Keypad, Receiver, Lock
- Terms: - magnetic strip, proximity, biometrics, card-free access, readers and tokens
- Potential weakness and vulnerability of poor system design
- Standalone, Networked and Computer based systems
- Locks: - Mechanical and electromechanical, mortise and rim release units
- Use of timers and timed zones within access control systems
- Storing information gathered by an access control system
- Cables: - Types, uses, and applications, Power Supply Units
- Fault-finding techniques
- Relevant standards and issues, Changing technology and keeping updated

Practical "Hands-On" experience: - 50% approx.

Closed Circuit Television (CCTV)

The courses are designed to give participants a practical knowledge of various aspects of CCTV. Three courses are available including "Preliminary Electronic Security" designed to give people who have no previous electrical or electronics experience the prerequisite knowledge and skills required to attend the "CCTV Installation" course in addition to providing them with a flavour of what CCTV is all about. The "CCTV Installation" FETAC Level 5 course gives participants more in depth knowledge and practical skills. For more advanced applications, the "Digital CCTV & Remote Access" course focuses on integrating CCTV with computers, IP and modern communications technologies.

The courses can benefit people either working or intending to work as a: - Security Manager, Security Supervisor, Security Guard, CCTV Control Room Employee, CCTV Sales Person, CCTV Protected Premises Owner/Manager, Potential CCTV Purchaser/Advisor, CCTV System Maintenance Employee, CCTV Installer, CCTV Specifier. They can also benefit people with technical experience who need to upgrade their skill levels and qualifications such as:- Alarm Installers, Cable Installation Personnel, Electricians, Fitters, Technicians, etc. OR anyone just wishing to improve their knowledge of CCTV.

FETAC
Further Education and Training Awards Council
Seirbhísí Oideachais agus Oiliúna

CCTV INSTALLATION

AIM: - This course is designed to give participants a practical knowledge of the operation and installation of CCTV systems at a foundation level.

QUALIFICATIONS: -

1. On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate
2. On completion of the Course and successfully completing 1 written examination and a number of FETAC specified practical assessments, the participant will receive the FETAC - Level 5 Award – CCTV & Lighting (5N1771)

DURATION: - 24 hours (8 x 3 hour training sessions). Additional time may be allocated if necessary. Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Understand the fundamental elements that make up a CCTV System.
- Set up a Camera.
- Set up a Monitor.
- Set up Switches.
- Set up Quads.
- Set up Multiplexers.
- Set up recording devices.
- Connect up and test system elements.
- Be aware of the issues associated with lighting and scene illumination.
- Adjust the Back Focus of a lens to prevent picture going out of focus from day to night.
- Be aware of the significance of the "Operational Requirement" and the Rotakin ® Test System
- Be aware of relevant standards and issues.
- Use a lens calculator to choose correct lens for particular application.
- Have an awareness of the changing technology and it's impact on the industry.

COURSE CONTENT: -

- CCTV Systems: – Introduction and uses.
- Elements of a basic CCTV system: - Camera, monitor and digital recorder.
- Camera types and uses: - Fixed and movable, indoor and outdoor, monochrome and colour, day and night.
- Camera specifications: - Sensitivity, signal to noise ratio and resolution. Back Focus adjustment.
- Lens types: - Fixed and variable focal length, manual and motorised zoom. Use of lens calculator.
- Scene illumination: - Lighting considerations, LED's, infrared lamp maintenance and bulb life.
- Switches, Quads, Multiplexers and control systems: - Types and applications.
- Monitors and Multiple screen displays.
- Recording the footage: - Analogue and Digital video recorders.Time-lapse recording. Reviewing video footage.
- Cables and connectors: - Types, uses, limitations, preparation and testing.
- Introduction to Digital CCTV and IP technology
- Connection to other security systems.
- Use of test equipment including: - Multimeters, Oscilloscopes, Light Meters, Pattern Generators and Cable Length Meters.
- Relevant standards, issues and the "Operational Requirement".
- The Analogue or Digital option? Changing technology and keeping updated.

Practical "Hands-On" experience: - 50% approx.

DIGITAL CCTV & REMOTE ACCESS

AIM: - This course is designed to give participants a practical knowledge of integrating Analogue and Digital technologies in addition to access and control from remote locations.

QUALIFICATION: - On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate.

DURATION: - 18 hours (6 x 3 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Understand the fundamental elements that make up a Digital CCTV System.
- Understand how to integrate Analogue with Digital technologies.
- Set up IP, wireless and Covert cameras.
- Configure an IP controlled telemetry systems.
- Access and control CCTV from remote locations.
- Set-up an IP/Network solution for CCTV.
- Set-up and programme digital recording devices.
- Keep updated with latest standards and changing technology.

COURSE CONTENT: -

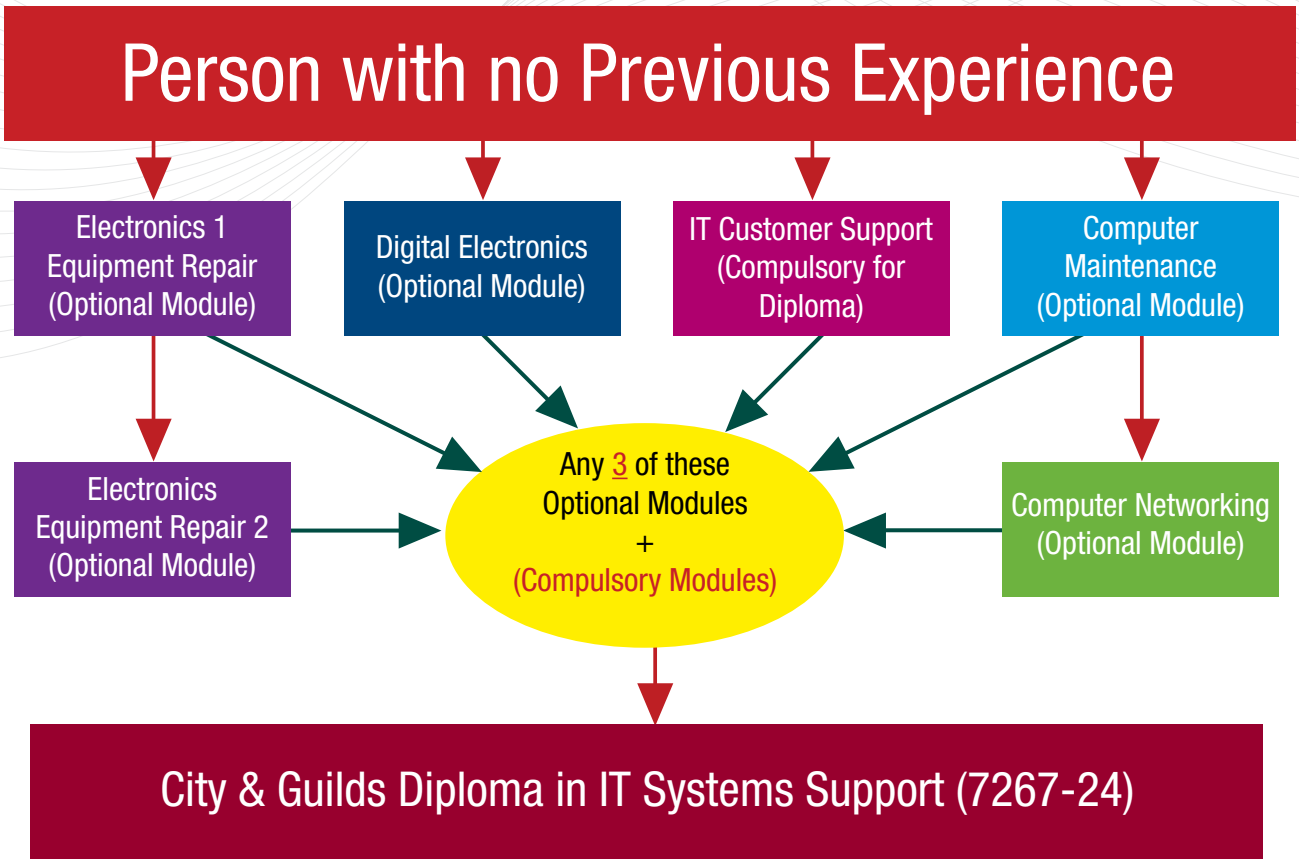
- Digital CCTV Systems: – Introduction and uses. Core elements of a system.
- Integrating Analogue with Digital technology.
- Cameras: - IP Cameras, Covert cameras, wireless systems.
- Telemetry systems: - IP Controlled Pan, Tilt and Zoom controls, setting up presets.
- Accessing images from remote locations: - CCTV monitoring and control over LAN/ WAN/ Internet.
- Transmission of video signals: - Cable, Fibre-Optic and IP.
- IP Technology, LAN, WAN and network principles.
- Personal Computer principles.
- Integrating CCTV with existing Computer network.
- Setting up IP/Network solutions.
- IP Video Encoders, Video Compression techniques.
- Recording technology: - DVR's, Network Video Recorders (NVR), Setting up and Programming recording devices.
- CCTV Standards, legislative and ethical issues.
- Keeping up with latest industry developments.

Practical "Hands-On" experience: - 50% approx.

Electronics and IT Systems Support (City & Guilds)

City & Guilds
DIPLOMA OPTION

There are a number of courses available from Hi-Tech Training including Analogue and Digital Electronics, IT Customer Support, Computer Maintenance and Computer Networking. Each of these internationally recognised City and Guilds courses incorporate approximately 50% practical "Hands-On" experience. The courses are available at NVQ level 2. This is equivalent to Level 4 on the Irish National Framework of Qualifications (NFQ). Successfully completing a particular combination of courses can lead to a City & Guilds Internationally recognised Diploma in IT Systems Support (7267-24). To achieve full certification for the IVQ (International Vocational Qualification) Diploma in IT Systems Support, learners must complete 4 units, comprising one core (shown in Red), plus three optional units from the choice shown in the table, below.



Please note: -

- A City & Guilds Certificate will be issued for each successfully completed unit.
- IT Customer Support Unit + 3 Optional Units = IVQ Diploma in IT Systems Support

Electronics Equipment Repair Courses

These courses involve Analogue Electronic Circuits and Components. These Circuits and Components are used in Amplifiers, Power Supplies, Stereos, Hi-Fi Systems, Radios, etc. They are also used in a Computer's Power Supply Unit and to a lesser degree in the main Computing Circuitry. Electronics Equipment Repair I and 2 are available and each course incorporates approximately 50% practical "Hands-On" experience.

City & Guilds
DIPLOMA OPTION

ELECTRONICS EQUIPMENT REPAIR I

AIM: -To enable participants to build, test and fault-find Analogue Electronic circuits at introductory level.

QUALIFICATIONS: -

1. City & Guilds of London Institute Technology, Components and Circuits (Examination No. 7267-421). This examination consists of 1 written paper and 5 practical assignments. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
2. On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

DURATION: -

30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary.

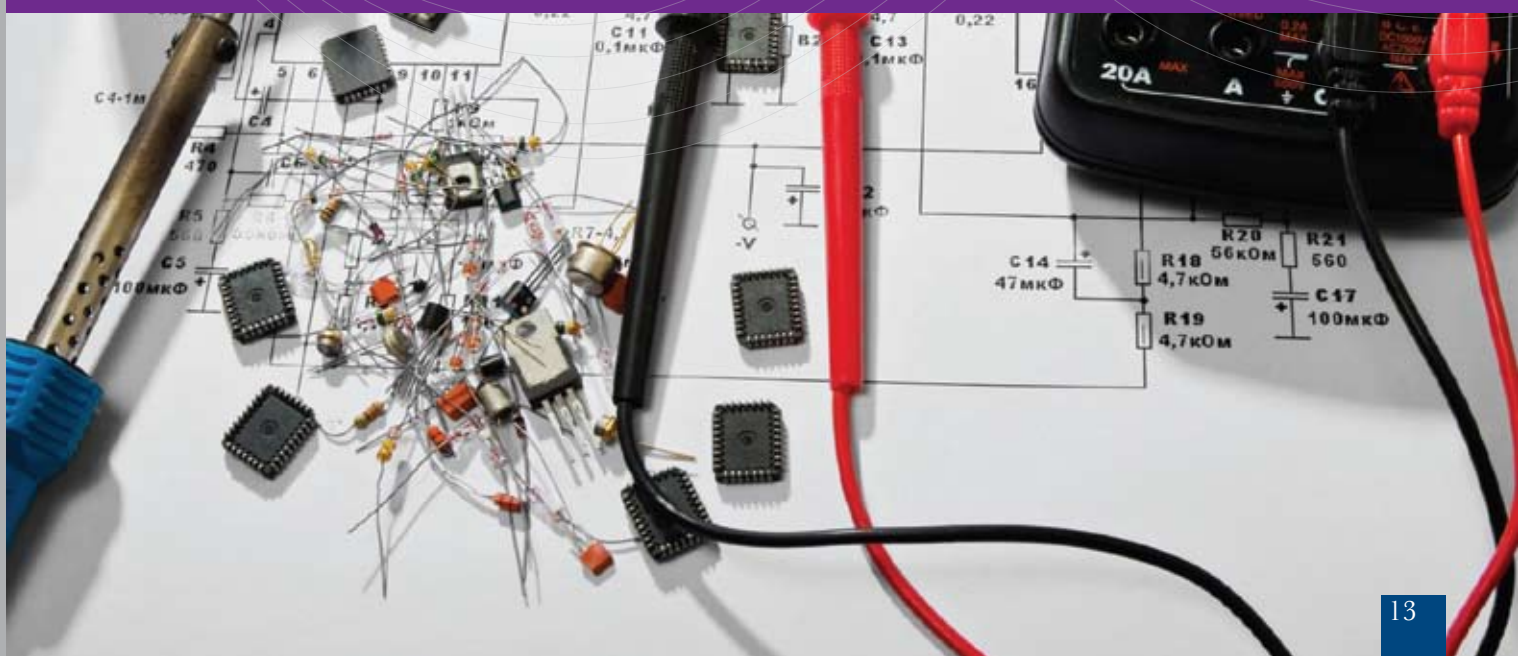
LEARNING OBJECTIVES: -

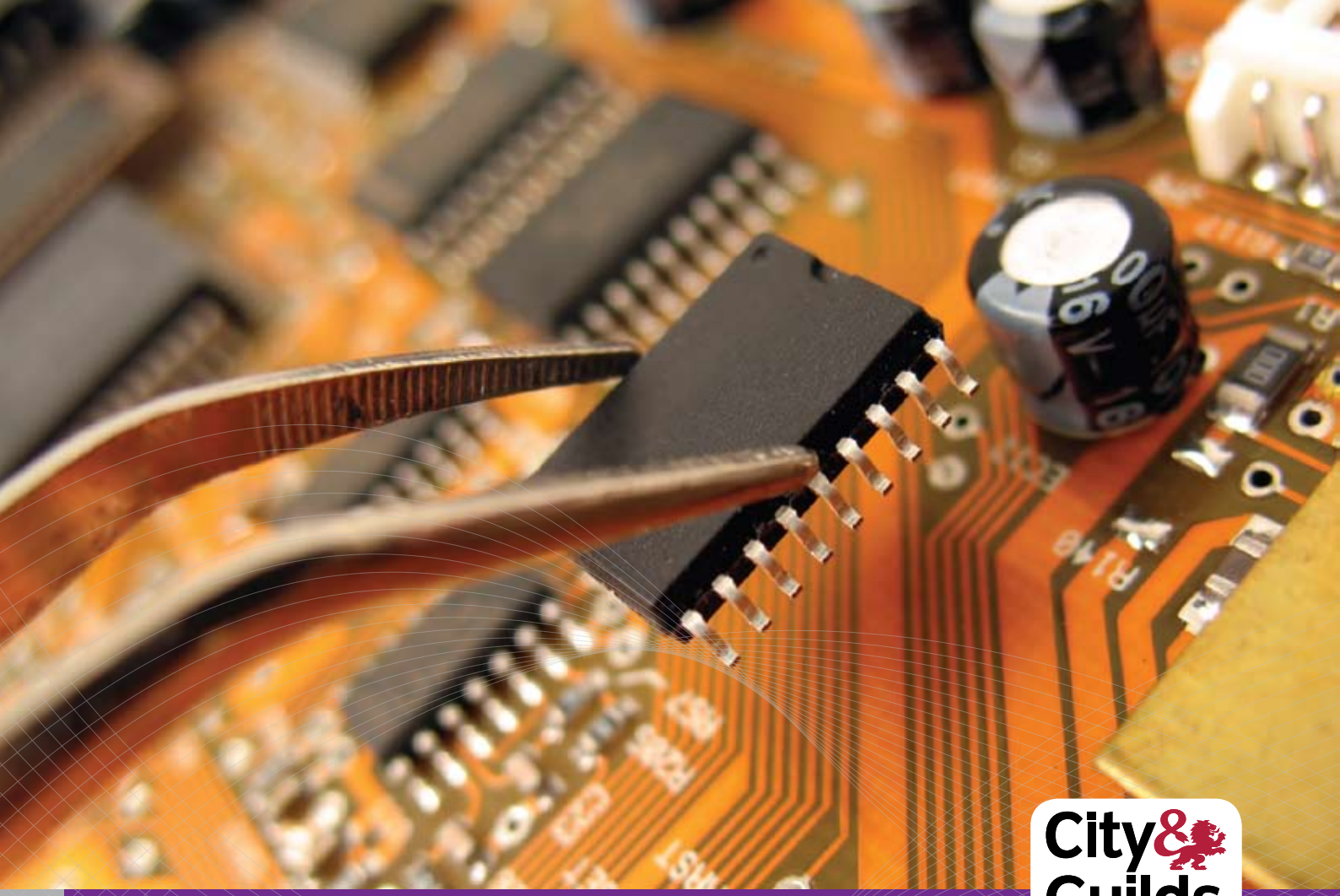
- Demonstrate a knowledge of the operation of a wide range of electronic components and circuits and their applications in modern electronic based equipment such as amplifiers, Hi-Fi systems, stereos, control systems, etc.
- Constructing, testing and faultfinding the following popular basic circuits: - Power supplies, amplifiers, timers, etc.
- Become competent in the correct use of electronic test and measurement equipment such as Analogue and Digital Multimeters and Oscilloscopes.

COURSE CONTENT: -

- Health & Safety, Care of Tools and instruments for assembly and repair
- PCB's: - Types and Construction. Assembling devices on breadboard and prepared PCB. Soldering and De-Soldering Techniques. Use of solder wick and suckers.
- Introduction to Electronics: - Electric Current, OHMS Law, Insulation, Conduction and related formulae. Resistor and capacitor colour codes.
- Practical uses of commonly used components e.g. Cables, connectors, fuses, batteries, resistors, capacitors, diodes, LED's, transformers, etc.
- Construction, testing and faultfinding the following popular basic circuits: - Power supplies, amplifiers, timers, etc.
- Test Equipment: Analogue and Digital Multimeters and Oscilloscopes.

Practical "Hands-On" experience: - 50% approx.





City & Guilds
DIPLOMA OPTION

ELECTRONICS EQUIPMENT REPAIR II

Aim: - To enable participants to build, test and fault-find more complex Analogue Electronic circuits.

Qualifications: -

1. City & Guilds of London Institute Electronic Devices and Testing (Examination No. 7267-423).
   This examination consists of 1 written paper and 4 practical assignments. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
2. On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

Duration: - 30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary

Learning Objectives: -

- Study a wide range of more complex Analogue Electronic Circuits, Components and Test Equipment.
- Analyse and diagnose faults in electronic circuits.
- Use electronic test equipment including, Multimeters, Oscilloscopes, Function Generators, Sweep Generators, etc.

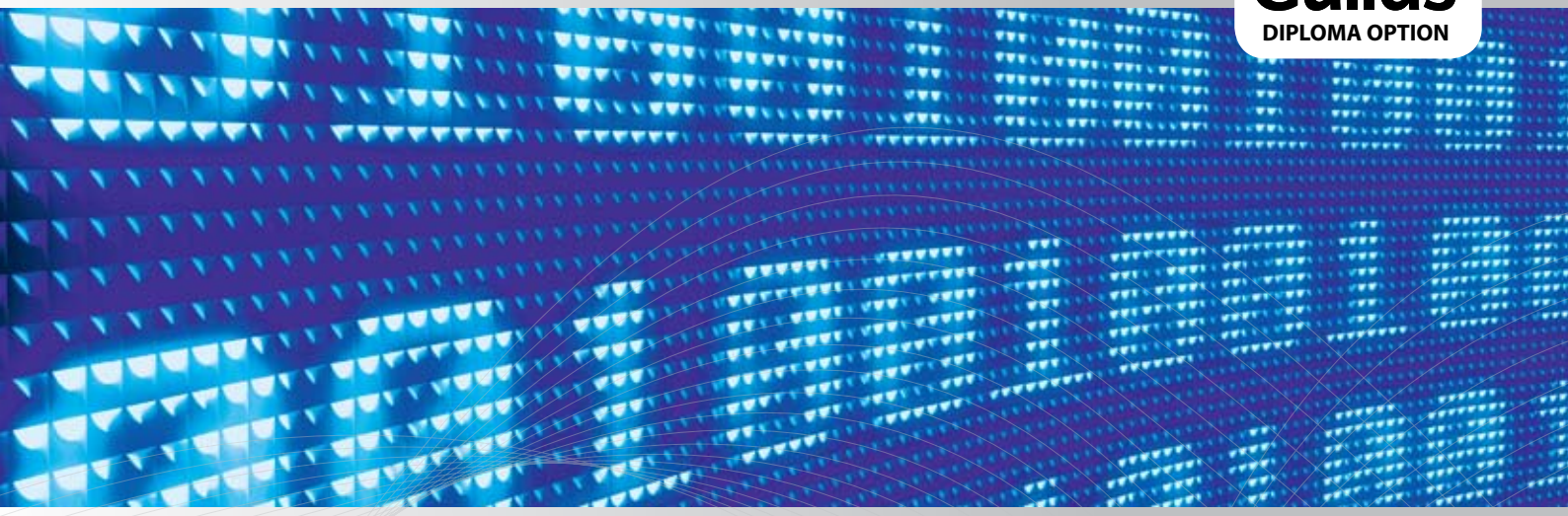
Course Content: -

- Health & Safety, Care of Tools and instruments for assembly and repair.
- Sourcing component packaging data, assembly and ESD precautions on discrete and integrated components and equipment.
- Components and associated circuitry: - Resistors, Capacitors, Diodes (signal, power, zener), Transistors (NPN and PNP), Relays, operational amplifier circuits etc. Associated Formulae, Graphs and Arithmetic.
- Power Supplies: - Transformers: - types and uses, half wave rectifier and full wave bridge rectifier. Smoothing, filtering and regulating techniques.
- Voltage regulators – Discrete and Integrated (SIL and DIL). Heat sinks for high power components. Battery charger function and modes.
- Analysing, building and faultfinding the following circuits: - Power supplies, amplifiers, switching, protection, filtering, etc.
- Test Equipment: - Multimeters, Oscilloscopes, Function Generators and Sweep Generators, etc.

Practical “Hands-On” experience: - 50% approx.

Digital Electronics

City & Guilds
DIPLOMA OPTION



This course is designed to give a practical knowledge of the type of electronic circuitry which is used in a Computer System or in any type of Computer Controlled equipment such as Photocopiers, Cash Registers, etc. Digital Electronics involves the use of Silicon chips (Integrated Circuits). The internal structure of a computer is to a large extent comprised of Digital Electronic Circuits

Aim: - To enable participants to build, test, and fault-find common Digital Electronic circuits used in computers and computer controlled equipment.

Qualifications: -

1. City & Guilds of London Institute Digital Electronics 2 (Examination No. 7267-425). This examination consists of 1 written paper and 4 practical assignments. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
2. On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

Duration: - 45 hours (15 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary

Learning Objectives: -

- Study and use of popular Digital Electronic gates and more advanced circuits.
- Building and fault-finding a range of Digital Electronic circuits.
- Use test equipment including Multimeters, Oscilloscopes, logic probes and pulsers to implement systematic fault-finding techniques.

Course Content: -

- Health & Safety, Care of Tools and instruments for assembly and repair
- Introduction to Electronics: - Electric Current, OHMS Law, Insulation, Conduction and related Formulae. Resistor colour codes.
- Numbering systems, TTL and CMOS technologies
- Practical study of Digital I.C.'s including AND, NAND, OR, NOR, X-OR, Inverter, Buffer, SR Latches and D-Latches.
- Oscillators, Multivibrators and 555 Timers. Switches and Switch De-bounce circuits and their applications
- Counters, Counter Decoding Circuitry, Shift Registers
- A-D and D-A converters
- Digital Displays: - LED and LCD, numeric and alphanumeric, operating currents, voltages and power requirements. Display decoders and drivers.
- Test Equipment: - Practical use of Analogue and Digital Multimeters, Oscilloscopes, Logic probes, Logic Pulsers, etc.
- Fault-finding techniques: - Diagnosing and rectifying faults on circuits built during course.

Practical "Hands-On" experience: - 50% approx.

IT Customer Support

City & Guilds
DIPLOMA OPTION

AIM: - This course will enable candidates provide routine customer support to a range of Computer users.

QUALIFICATIONS: -

1. City & Guilds of London Institute Customer Support Provision 2 (Examination No. 7267-402). This examination consists of 1 written paper and 1 practical assignment. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
2. On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

DURATION: - 30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary.

LEARNING OBJECTIVES: -

- Provide technical information and support in response to customer requirements
- Identify potential improvements in the customers' use of resources
- Assist in reviews to identify how automated procedures may improve customers' use of resources
- Create routine automated procedures and assist in the creation of complex automated procedures

COURSE CONTENT: -

- Providing technical support and effectively responding to a customer's request
- Identify advantages and disadvantages of different methods of communication with customers. Using open and closed questions, questionnaires, etc. to determine customer requirements.
- Use of Operating Procedures, guides, notes and telephone help-lines.
- Create routine automated procedures and assist in the creation of complex automated procedures. eg. timed back ups and data transfer, scheduled virus and spyware scan, scheduled maintenance (disk scanning, defragmentation, shortcuts and hyperlinks and auto-run applications)
- Utilising call logging software, technical guides and logs, manufacturers' web sites, CD, DVD, libraries, electronic media, and bulletin boards.
- Monitoring system trends, identifying potential failures, identifying user training needs, identifying weak/unreliable areas in the system and identifying potential improvements.
- Health and Safety regulations and constraints. Data Protection related issues.
- Use of database customer relationship management (CRM), Voice over Internet protocol (VOIP), Remote system access and Instant messaging.

Practical "Hands-On" experience: - 50% approx.

Computer Maintenance

AIM: - To enable participants to diagnose and repair system level faults in PC based systems at foundation level.

QUALIFICATIONS: -
City & Guilds of London Institute PC Technology (Examination No. 7267-426). This examination consists of 2 written tests and 3 practical assignments. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

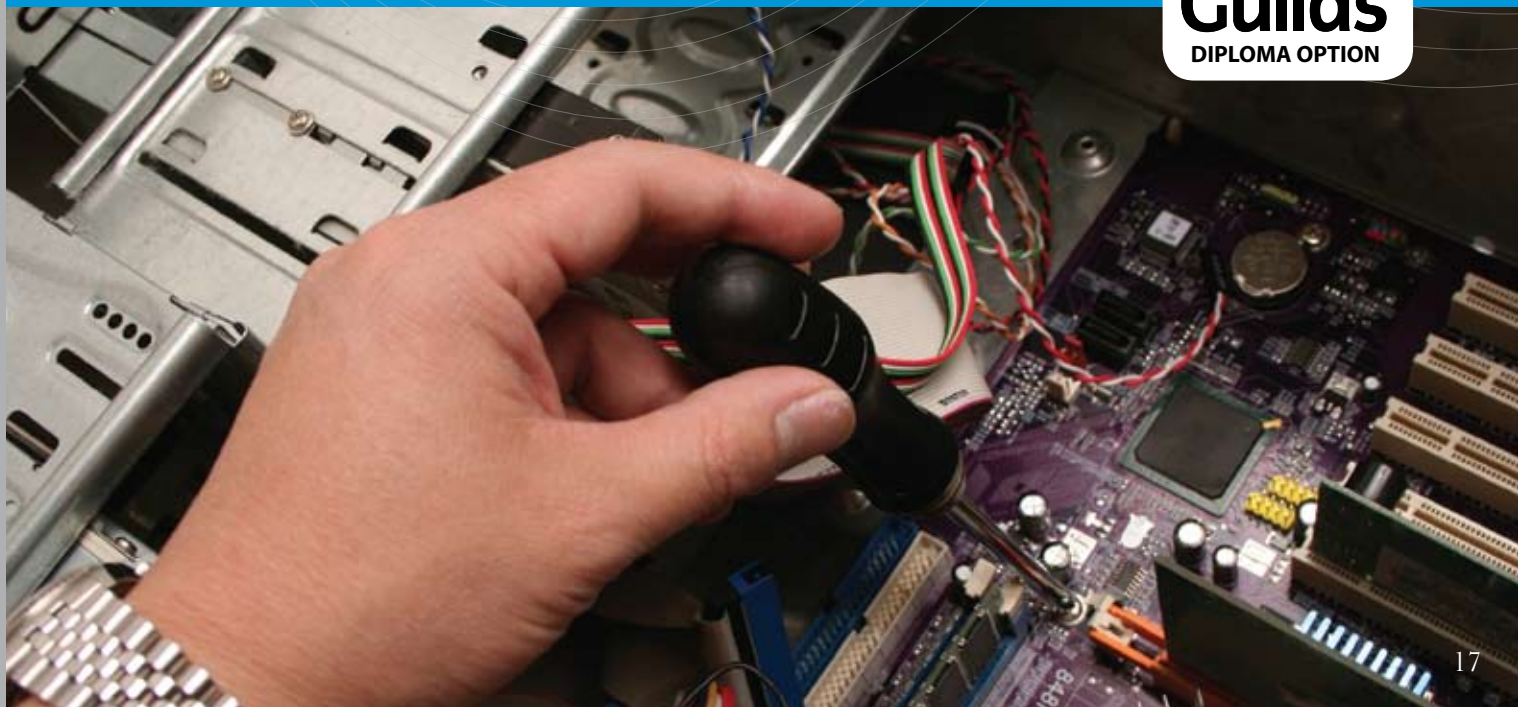
Duration: - 30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary

LEARNING OBJECTIVES: -
- Demonstrate a practical understanding of basic PC systems
- Install and commission a working stand-alone PC
- Demonstrate a practical understanding of data storage devices
- Demonstrate a practical understanding of current printers

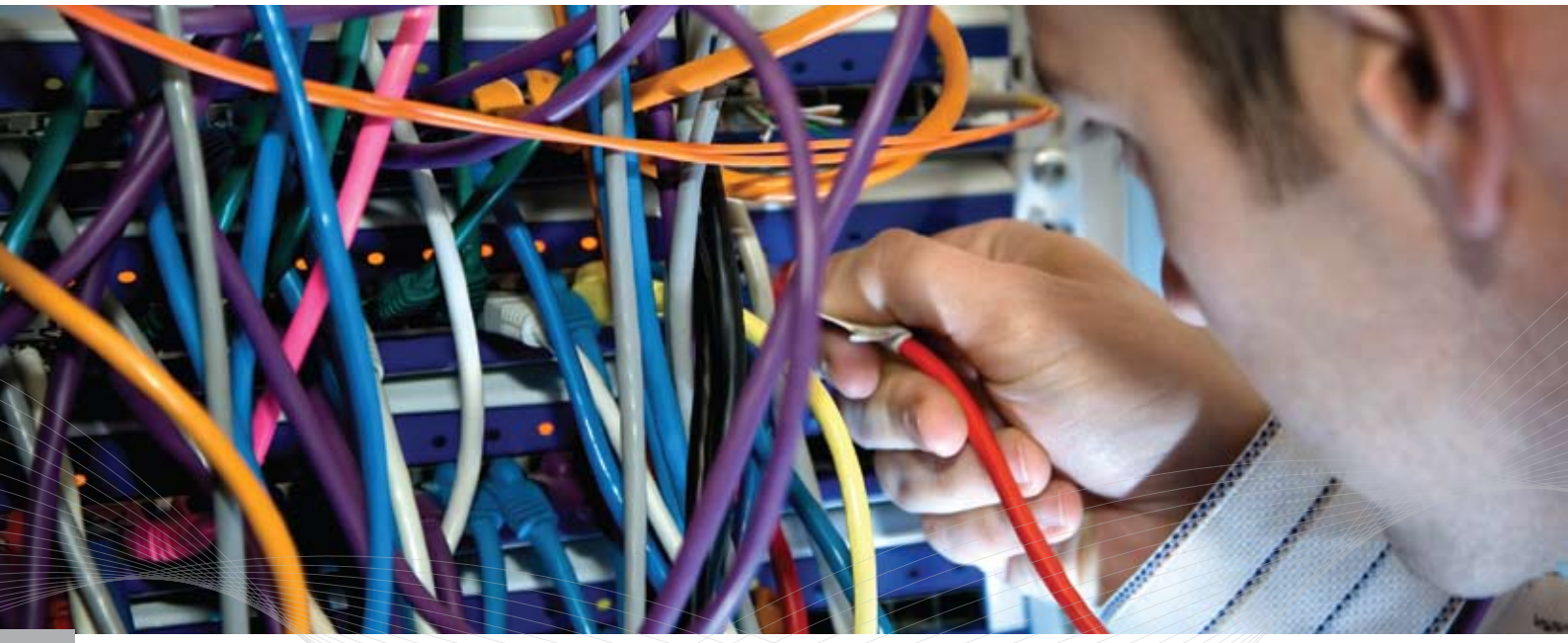
COURSE CONTENT: -
- Components of a computer: - microprocessor, memory, video slot/card, sound card, I/O card, FDD and CD controllers, serial and parallel interfaces, expansion modules.
- Microprocessor: - Specifications, speed, data and address bus widths
- Memory: - RAM, ROM, cache, floppy and hard disk, CD and DVD ROM, USB. Maintenance, testing and cleaning drives.
- I/O: - Serial and parallel, RS232, RS423, Centronics, serial and parallel cables and connector testing for use in current PC systems
- Monitors and Displays: - Definitions, types, uses and applications.
- Printers: - types, applications and specifications. Principles of operation of inkjet and laser printers, paper handling, printer cables and connections.
- Power supplies. Ratings: - Voltage, current and power requirements, DC and AC. The energy saving function, block diagram, typical faults, software setup and menu-driven adjustments.
- Electro-static discharge (ESD) and safety precautions.
- The WEEE directive, correct disposal of PC and printer waste.
- Installing and commissioning functioning systems.
- Fault Diagnosis: - PC boot-up sequence, power on self test (POST), virus checking and clearing, Software diagnostics and flowcharts. Component and module substitution and testing techniques.

Practical "Hands-On" experience: - 50% approx.

City & Guilds
DIPLOMA OPTION



Computer Networking



Networks are a major component of ICT (Information & Communication Technology) communication. This course provides learners with both the practical and theoretical knowledge of basic networks. During the course, participants will learn about the different components used to create a network including hardware, software and topologies.

AIM: - To enable participants to install, configure and test a small computer network.

QUALIFICATIONS: -

1. City & Guilds of London Institute "Install, configure and test ICT Networks" (Examination No. 7266/7267-408). This examination consists of 2 practical assignments. The qualification can be used as part of the requirement for City & Guilds Diploma in IT Systems Support (7267-24).
2. On completion of the Course, having been successful in an examination, the participant will receive a Hi-Tech Training Certificate.

DURATION: - 30 hours (10 x 3 hour training sessions). Classes will be held in comfortable surroundings. Additional time may be allocated if necessary.

LEARNING OBJECTIVES: -

- Identify network concepts and terminology
- Identify components that make up a network
- Install, configure and test a network
- Use and control a local area network

COURSE CONTENT: -

- Network features, hardware and software components.
- Network topologies, technologies and communication protocols.
- Peer-to-peer and server based networks including: - servers, clients, peers, shared resources, operating systems, administration, security, central support systems.
- OSI layers (Open Systems Interconnection), MAC address, sub-netting.
- Internet access technologies: - DSL, Broadband (ADSL), PSTN (dial-up), Satellite, Wireless.
- Selecting cable or wireless systems for connection.
- Hardware components for a peer-to-peer network including: - interface cards, hubs/switches, cables, connectors, tools and anti-static equipment.
- Connecting network printers.
- Virus protection, firewalls and passwords, security measures, file management and access rights.
- Testing networks, resolving routine problems associated with installations

Practical "Hands-On" experience: - 50% approx.

Fire Alarm Foundation

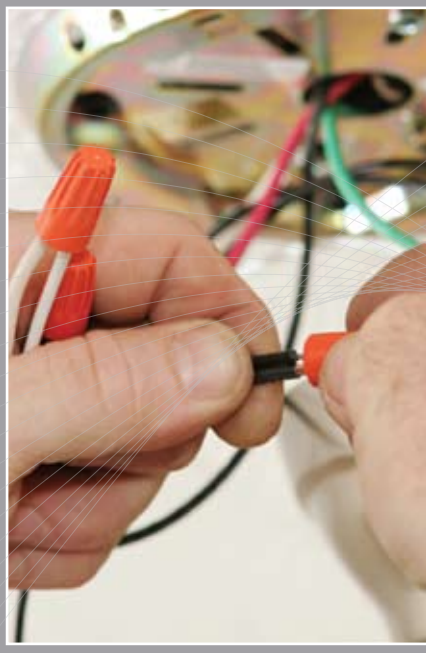
AIM: - This course is designed to give participants a practical knowledge of the operation and installation of Fire Alarm Systems at a foundation level.

QUALIFICATION: - On completion of the Course, having been successful in TWO examinations (one written, one practical) the participant will receive a Hi-Tech Training Certificate.

DURATION: - 18 hours (6 x 3 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Select, prepare and connect cables to associated equipment.
- Be aware of different detection and signalling devices and their uses.
- Wire Standard and Addressable fire control Panels to appropriate detection and signalling devices.
- Have a fundamental knowledge of how to design a system.
- Have a fundamental knowledge of the requirements to commission a system.
- Trouble shoot and test a system.



COURSE CONTENT: -

- Review of electrical circuits, voltage, current, resistance, insulation and conduction.
- Resistor connections, power supplies, relays and associated applications.
- Batteries: - Testing and choosing battery to comply with standard's requirements.
- Control Panels: - Standard and Analogue addressable control panels. Programming techniques. Panel location.
- Detection devices: - Manual call points, smoke detectors, heat detectors. Detector placement, spacing and mounting heights. Use of smoke and heat detector test equipment.
- Signalling devices: - Bells and Sounders, numbers, types, locations and wiring.
- Auxiliary output connections: - Fire door releases and roof vents.
- Cables: - Types, uses and preparation.
- Standards for Installation of fire alarm equipment.
- System design: - Protecting life or property?
- Trouble shooting, Testing and Commissioning installations.

In order to simulate a practical installation in a building, each participant will wire up a Fire Alarm Control Panel to typical auxiliary equipment such as Break Glass Units, Smoke Detectors, Heat Detectors, Bells, Sirens, etc.

Practical "Hands-On" experience: - 50% approx.

Preliminary Electronic Security

AIM: - This introductory (or revision) course is designed to provide participants who have no previous electrical or electronics experience with the background required to attend the follow-on CCTV Installation Course, Access Control Course or Fire Alarm Foundation Course.

QUALIFICATION: - A Certificate of course completion will be issued to participants who have fully attended the course.

DURATION: - 6 hours (2 x 3 hour training sessions). Classes will be held in comfortable surroundings.

LEARNING OBJECTIVES: -

- Understand the core elements that make up an Electronic Security System.
- Understand the role of electrics and electronics in Security.
- Study fundamental electric and electronics terminology.
- Test basic electronic components, connectors and cables.
- Construct basic electric and electronic circuits.
- Become competent in the use of appropriate test equipment.

COURSE CONTENT: -

- Electronic Security Systems: – Introduction, core elements, uses and practical demonstration.
- Introduction to Electronics: - OHMS Law and related formulae, Insulators and Conduction, Series and Parallel Circuits, AC and DC, Multiples and sub-multiples.
- Relays: - Operation and Applications.
- Test Equipment: - Analogue and Digital Multimeters.
- How to test cables and connectors.
- Analogue and Digital technologies.

Practical "Hands-On" experience: - 50% approx.

HI-TECHTRAINING
TRAIN FOR SUCCESS

DUBLIN CENTRE

CORK CENTRE

4 North Great George's Street, Dublin 1
Tel: 1850 759 759
Text: +353 (0) 87 259 6970
Email: admin@hitechtraining.ie
Web: www.hitechtraining.ie

36 Mary Street, Cork
Tel: 1850 759 759
Fax: +353 (0) 21 431 4711
Email: admin@hitechtraining.ie