OEM ENGINEERING APPRENTICESHIP

MANUFACTURING | INSTALLATION | SERVICE

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Bord Oideachais agus Oiliúna an Chabháin agus Mhuineacháin
Cavan and Monaghan Education and Training Board

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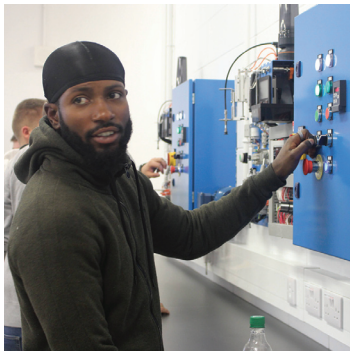
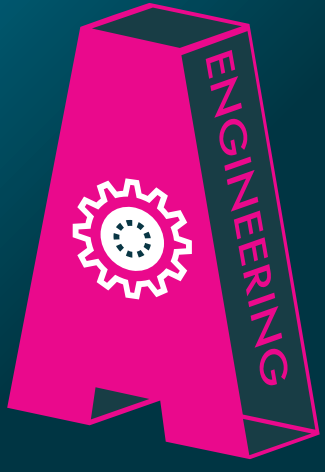
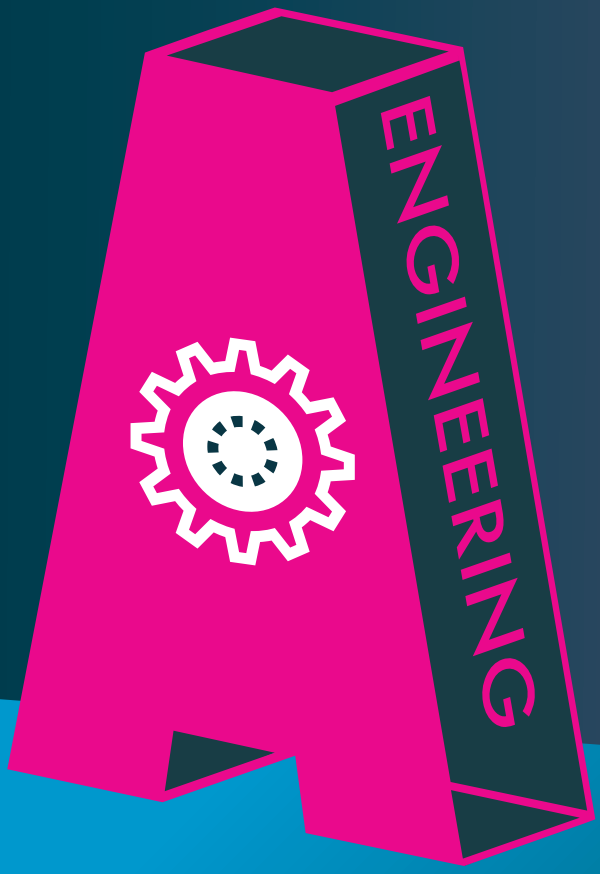


OEM ENGINEERING APPRENTICESHIP

GUIDE FOR EMPLOYERS




ENGINEERING

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ACRONYMS

Acronym	Meaning
CSG	Consortium Steering Group
QC	(FET) Quality Council
SAO / STA	SOLAS Authorised Officer / SOLAS Training Advisor
OEM	Original Equipment Manufacturing
ETB	Education and Training Board
ETBI	Education and Training Boards Ireland
ICSG	Initial Consortium Steering Group
NPB	National Programme Board
QQI	Quality and Qualifications Ireland
RPL	Recognition of Prior Learning
MIPLOs	Minimum Intended Programme Learning Outcomes
MIMLOs	Minimum Intended Module Learning Outcomes
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
QAP	Quality Assurance Procedures
FET	Further Education & Training
STEAM	Science, Technology, Engineering Arts and Mathematics
NFQ	National Framework of Qualifications


WARNING

1 INTRODUCTION

APPRENTICESHIPS WERE ESTABLISHED AND ARE MANAGED UNDER THE STATUTORY OBLIGATIONS IMPOSED BY THE INDUSTRIAL TRAINING ACT, 1967 (AS AMENDED), AND ANY APPRENTICESHIP RULES (WHICH MAY APPLY IN RELATION TO THE RELEVANT APPRENTICESHIP PROGRAMME FROM TIME TO TIME).

The objective of the statutory apprenticeship is to provide apprentices with the required knowledge, skills, and competence to work autonomously in their selected craft or occupation. An apprenticeship is a statutory validated training and educational programme for SOLAS-registered apprentices, which is enterprise-led in conjunction with the relevant stakeholders.

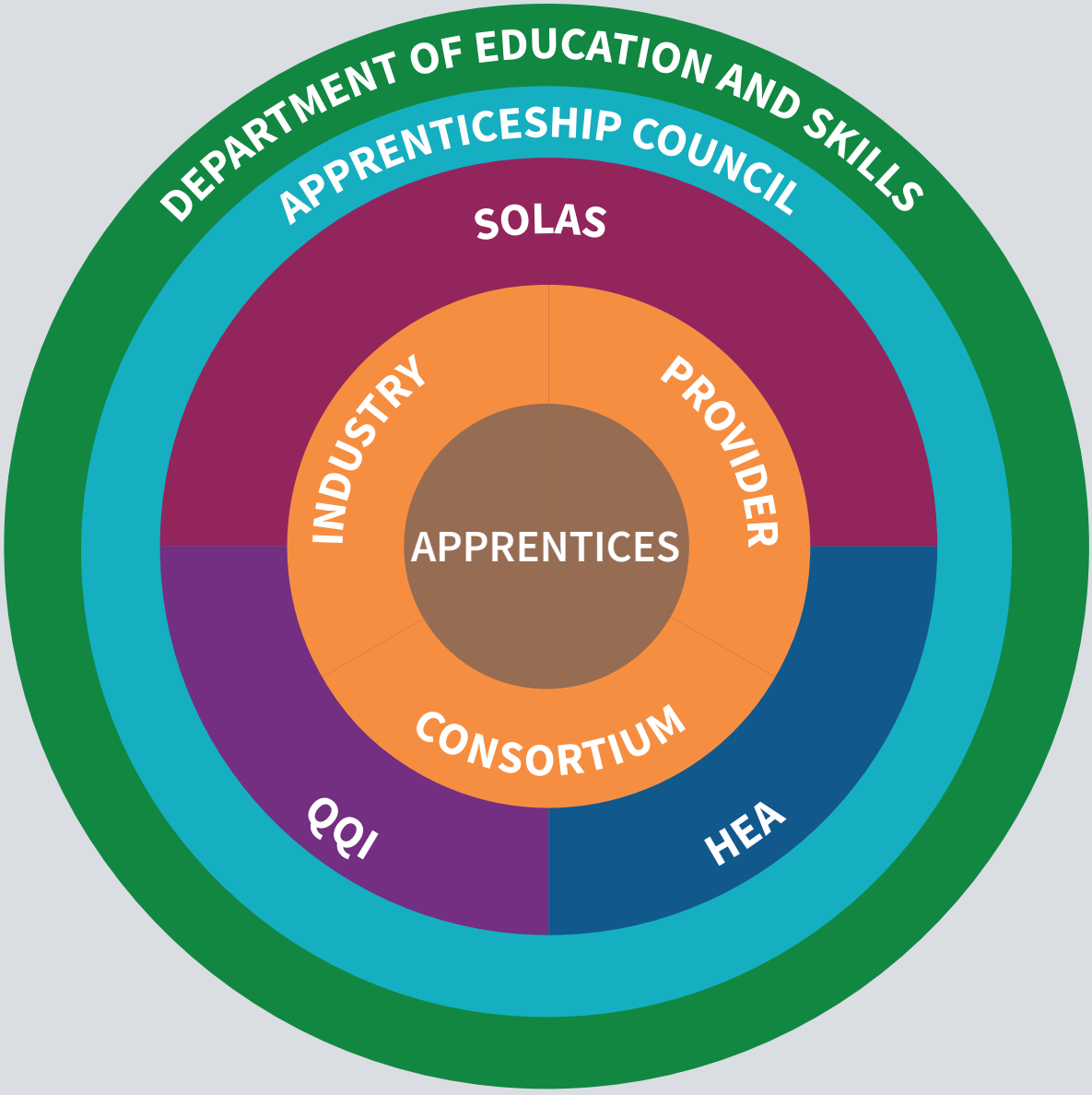
It is a programme of structured education and training which combines learning in the workplace with learning in a training centre or educational college. Apprenticeships provide the opportunity for learning acquired off-the-job to be applied and further developed under supervision in the workplace. Apprenticeship is an exciting and proven way for employers to develop talent for their company and industry as well as opening up new and rewarding careers, with learning grounded in the practical experience of undertaking a real job.

1.1
Apprenticeship Stakeholders

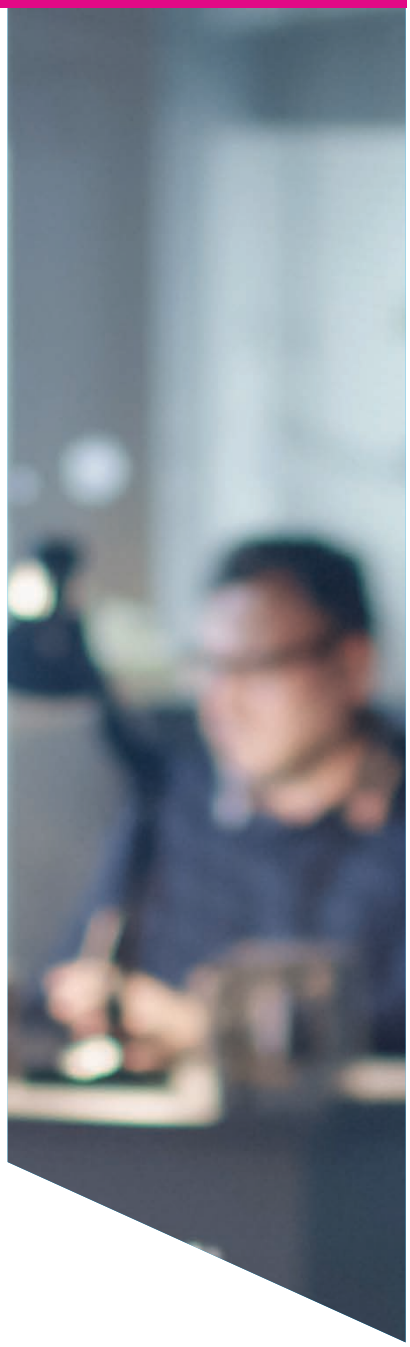
Stakeholders relevant to the development and implementation of an Apprenticeship Programme include:

- Prospective and existing employers of apprentices and their representatives
- SOLAS
- Prospective and existing apprentices
- Organisations representing employees, including trade unions and excepted bodies[1]
- Practitioners in the occupation concerned
- Consortia established to develop and implement new apprenticeships
- Individual programme providers and managers
- Quality and Qualifications Ireland (QQI)

[1] Industrial Relations (Amendment) Act 2015


DEPARTMENT OF EDUCATION AND SKILLS
APPRENTICESHIP COUNCIL
SOLAS
INDUSTRY
PROVIDER
APPRENTICES
CONSORTIUM
QQI
HEA

2 BACKGROUND TO OEM ENGINEERING APPRENTICESHIP



2.1 The OEM Sector

The OEM Engineering Apprenticeship is targeted at the Original Equipment Manufacturing, Installation and Services Sector. OEM represents all companies that sell to National and International markets for use in the agricultural, transportation, materials handling, quarrying, construction equipment, food processing, recycling handling,security, pharmaceutical, data centres and allied industries.

2.2 Industry Need

This apprenticeship programme is in direct response to '*The Future Skills Requirements of the Manufacturing Sector Report to 2020*' addressing the emerging demands for skills in the sector in Ireland. The Irish manufacturing sector contributes 25% of GDP and employs over 44,000 people both directly and indirectly. As a result, it is key to Ireland's continued economic success.

Having experienced significant job losses in the early part of the recession, employment in manufacturing has increased by over 35,000 over the last five years. This growth has occurred in all sectors including engineering. This OEM Apprenticeship is also in response to a particular deficit in skilled personnel at Level 6 as identified in OECD Employment Outlook 2017.

2.3

OEM Engineering Apprenticeship Stakeholders

The OEM Engineering Apprenticeship programme was developed by a consortia of employers and education providers, including Cavan Monaghan and Limerick Clare ETBs, in direct response to '*The Future Skills Requirements of the Manufacturing Sector Report to 2020'* addressing the emerging demands for skills in the sector in Ireland. All of these stakeholders worked within to design an apprenticeship training programme which would meet the needs of industry and plug the skills gaps in the Manufacturing Sector.

The OEM Engineering Apprenticeship has been rolled out in two centres:

1. Cavan Monaghan ETB at Monaghan Institute Campus
2. Limerick Clare ETB at Raheen Training Centre

On the job learning will take place within the company and the learner will also attend off the job education and training on a block release basis at the dedicated premises of the coordinating provider either at Cavan and Monaghan ETB's Monaghan Institute Campus or Limerick and Clare ETB's Raheen Training Centre.

3 THE STRUCTURE OF THE OEM ENGINEERING APPRENTICESHIP

1 Programme Structure and Duration

This is a three-year programme delivered over three stages:

- Stage one / Year one commences with 16 weeks off-the-job training (at Cavan and Monaghan ETB or Limerick Clare ETB) with the remainder of the year spent applying these skills in the workplace
- Stages / Years two and three follow the same structure

Breakdown of modules by stage/year:

16 WEEKS

CORE
- Health & Safety
- Engineering Drawings
- OEM Practices
- Electrical & Electronic Technology

UNDERPINNING
- Team Leadership
- Communication
- Applied Engineering

16 WEEKS

CORE
- Mechatronics
- Testing & Measurement of Electronic Systems
- OEM Operations Management

UNDERPINNING
- Team Leadership
- Communication
- Applied Engineering

16 WEEKS

CORE
- Analytics & Problem-Solving
- Industrial Robotics & PLCs
- Capstone Work-based Project

UNDERPINNING
- Team Leadership
- Communication
- Applied Engineering

The apprenticeship doesn't just focus on technical skills, it includes teaching the apprentice how to apply themselves to their job role, integrating and working as part of a team and applying knowledge and understanding to what they do, as well as providing support for their aspirations and future professional and personal development.

All apprentices are required to successfully complete assessments both on and off the job. Apprentices MUST successfully complete all assessments in Stage/Year 1 in order to progress to Stage/Year 2. In the same way, all assessments in Stage/Year 2 must be successfully completed in order to progress to Stage/Year 3.

Teaching and learning will take place initially through the delivery of classroom-based learning sessions which will provide the underpinning theory of the programme. Lessons, case studies, collaborative sessions and role-play will be utilised as teaching instruments. Further learning will occur in the workplace through training and experiential learning opportunities with the use of e-learning.

The classroom-based teaching will provide detail and support on each module's assessment strategy and provide feedback on assessment progress. On-the-job learning is evidenced by the apprentice completing a work-task assessment for each module and a reflective report at the end of each phase. The reflective log, portfolio and workplace practical task will be assessed as part of the overall assessment structure against the learning outcomes for each module.

The apprenticeship cycle is complete when an apprentice has successfully achieved the required qualifying standard, completed all of the alternating on-the-job and off-the job phases of the apprenticeship, and served the appropriate timeframe from the start date of each programme.

3.2
Programme Award

Upon successful completion of the apprenticeship programme, the apprentice will qualify as an OEM Engineering Technician, receiving an Advanced Certificate in OEM Engineering. This is a Major Award at NFQ Level 6 awarded by Quality and Qualifications Ireland (QQI).

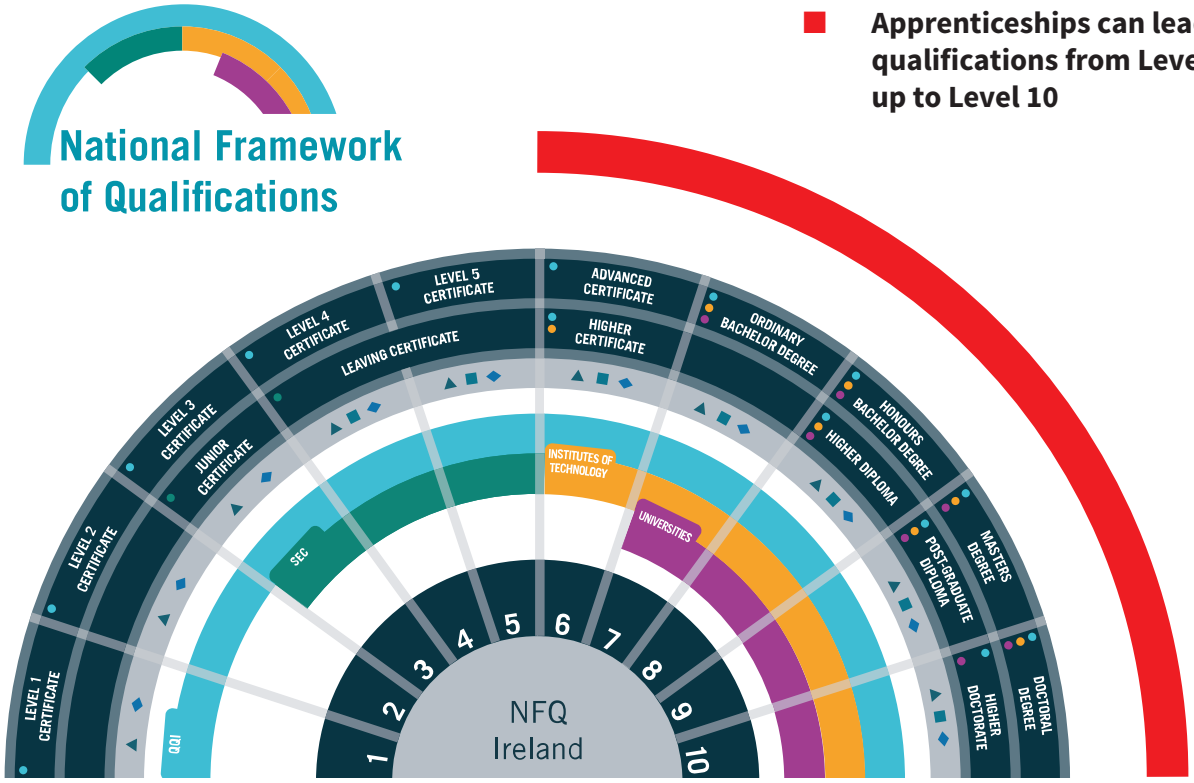
Graduates of the OEM apprenticeship will also be eligible to apply to a range of degree programmes in the third level sector. For further details on agreed possible arrangements please contact the Programme Manager.

Indicative Timetable

STAGE 1*					
** Week 1 - Week 13					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8.30 - 9.30	OEM Practice	Engineering Drawing	Health and Safety	Engineering Drawing	OEM Practice
9.30 - 10.30	OEM Practice	Engineering Drawing	Health and Safety	Engineering Drawing	OEM Practice
10.30 - 11.30	OEM Practice	Engineering Drawing	Health and Safety	Engineering Drawing	OEM Practice
11.30 - 11.45	**BREAK**				
11.45 - 12.45	OEM Practice	Elect/Electronic Tech.	Health and Safety	Applied Engineering	Elect/Electronic Tech.
12.45 - 1.45	Applied Engineering	Elect/Electronic Tech.	OEM Practice	Applied Engineering	Elect/Electronic Tech.
1.45 - 2.30	**LUNCH**				
2.30 - 3.30	Communications	Elect/Electronic Tech.	OEM Practice	Team Leadership	Elect/Electronic Tech.
3.30 - 4.30	Communications	Elect/Electronic Tech.	OEM Practice	OEM Supervision	Elect/Electronic Tech.

*Stage 1 runs to 16 weeks. Adjustments will be made for statutory holiday periods as and when required.
No annual leave may be taken during the off-the-job period of the programme

Apprenticeships can lead to qualifications from Level 5 up to Level 10



For further information consult: www.nfq.ie www.QQI.ie

Awards in the Framework

There are four classes of award in the National Framework of Qualifications

- Major Awards: named in the outer rings, are the principal class of awards made at a level
- Minor Awards: are for partial completion of the outcomes for a Major Award
- Supplemental Awards: are for learning that is additional to a Major Award
- Special Purpose Awards: are for relatively narrow or purpose specific achievement

Awarding Bodies

- Quality and Qualifications Ireland (QQI) makes awards in further and higher education and training
- SEC – State Examinations Commission (Department of Education and Skills)
- Institutes of Technology
- Universities

4 PROGRAMME OVERVIEW, AIMS AND OBJECTIVES

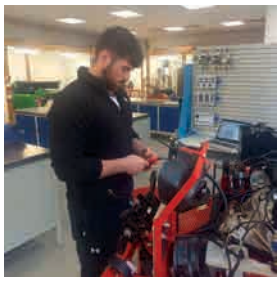
4.1

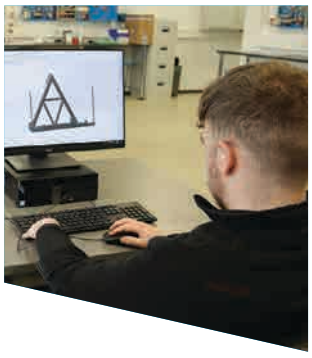
Programme Overview

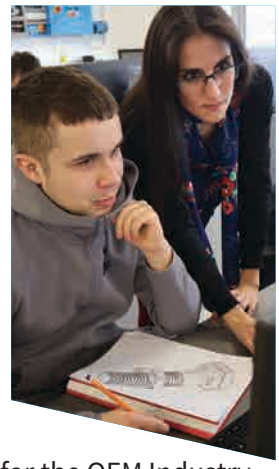
The overarching aim of this programme is to provide apprentices with the underpinning academic knowledge off-the-job in combination with practical experience on-the-job. This method of delivery will enhance their employment and educational opportunities in a diverse range of companies and sectors.

The combination of academic and work-based training throughout the programme ensures that all apprentices will graduate from the programme with an enriched experience of the traditional classroom blocks of study that can be directly applied to the workplace. This applied feature of the programme provides a unique experience and ensures its sustainability and applicability, as the learning and assessment undertaken is current, relevant and responsive to the OEM industry.

Targeting Leaving Certificate students and current OEM employees, this programme offers a unique opportunity to learn the trade in a practical, supportive environment while simultaneously working towards a recognised Quality and Qualifications Ireland (QQI) qualification. The programme provides further opportunities for successful graduates to enhance their careers within the OEM sector. The progressive learning experience of the programme takes the apprentice through a development journey from induction to completion over a 3-year period. The programme incorporates academic learning, skills training and personal development focused on behavioural and competency refinement. Graduates of this apprenticeship programme will provide industry with suitable employees who have the potential to progress into supervisory or management roles. Apprentices will be well placed to contribute to the development of the sector, and to respond to emerging sectoral developments.







4.2

Programme Aims

The OEM Engineering Apprenticeship has two main aims:

- To provide trained OEM Engineering Technicians, thereby bridging the skills gap for the OEM Industry
- To offer credible career paths and progression routes for these apprentices

4.3

Programme Objectives

- To provide apprentices with a qualification that is academically robust and vocationally relevant
- To equip apprentices with the knowledge, skill and competence required to perform effectively as an OEM Technician
- To develop highly skilled employees who can work autonomously, contribute to a technical team, and take personal responsibility for completing projects to relevant quality standards in a timely manner
- To acquire a foundation of skills and knowledge which ensures that the apprentice can interact effectively with colleagues and customers in an industrial setting which is experiencing constant and progressive change
- To enable participants of the programme to acquire a level of ability encompassing the underpinning knowledge, skills and competences relevant to their industry. Competency is demonstrated by the ability of the technician to apply their skills and knowledge in different contexts, and to exercise initiative and solve problems by determining possible solutions and judging the appropriateness of different approaches to challenges as they arise in their workplace
- To develop levels of self-awareness in their problem-solving, critical-thinking and communication skills linking their classroom learning with the challenges they face in the OEM industry
- To equip apprentices with the knowledge and skills required for progression in further education and/or specialist areas in the OEM industry
- To increase the apprentices personal and academic confidence through regular feedback and thus continuous improvement in a varied learning environment, thereby paving the way for lifelong learning

5 KEY STAKEHOLDERS

The function of the **National Consortium Steering Group (CSG)** is to ensure the National Apprenticeship Programme conforms to and evolves with the requirements of the occupation. It is industry led and acts to bring together the employers, the Coordinating Provider and other collaborating providers involved in the programme. It comprises of the national apprenticeship programme's key stakeholders including SOLAS as the Statutory Regulating Authority, employers, occupational associations, any occupational regulators, and the Coordinating Provider/s.

The **National Programme Board** is the single national entity with responsibility for the effective management, operation, monitoring and review of the National Apprenticeship Programme. The board will be managed by the Programme Manager and will consist of: Employers, Mentors, Instructors from the collaborating providers and a representative of apprentices nominated by the apprentices.

The **National Examination Board** will oversee the delivery and the assessment of the OEM Engineering Apprenticeship. Membership of the board will include the Programme Manager, at least one Instructor from each collaborating provider, at least one employer nominated Mentor and a Quality Assurance Officer from the coordinating provider supported by an External Authenticator.

The **National Programme Manager** is responsible for the management of the apprenticeship programme and the effective and efficient co-ordination, development, and delivery of the programme nationally. The Programme Manager will work with the CSG, Employers, Workplace Mentors, Instructors/Tutors, Internal and External Verifiers, Quality Assurance team and the National Examinations Board. This will ensure all aspects of the programme are delivered in accordance with procedures as agreed with programme validation. A crucial part of this role is to act as the main point of contact for employers and apprentices at all stages of the programme and to co-ordinate the various supports and resources available to them. Employers and apprentices are encouraged to contact the Programme Manager at any stage of the programme, especially in the early stages, if they have a particular concern or if they have an issue they wish to raise.

Each programme will have **Instructors** who will provide high-quality teaching and instruction to the apprentices aligned to the validated programme objectives and minimum intended learning outcomes. The Instructors/Tutors will be responsible for identifying any learning or skills needs the apprentice may have, ensuring their personal learning and assessment plan is drawn up and followed through to completion. At the start of the programme, the Instructor/s will work with the apprentice to develop a learning plan which sets down long-term goals and short terms objectives. Expected achievements are identified as planned signposts of progress which apprentices, tutors and workplace mentors monitor and record jointly.

The **Quality Assurance Co-ordinator** is responsible for ensuring the work undertaken by tutors and assessors in delivering the programme, meets the required quality standards. They may occasionally visit with the Instructor to observe the quality of teaching and learning being provided. As part of Quality Assurance arrangements an employer and apprentice can expect to receive monitoring visits from the college Instructor. The objective of in-company monitoring is to verify that the training and assessment practices in the workplace meet the standards required for each on-the-job element of the apprenticeship.

The **Employer** is expected to train the apprentice in the required on-the-job aspects of apprenticeship and to provide them with the opportunities to practice new skills under supervised conditions while taking cognisance of their skill level at the time the task is being undertaken. The employer will facilitate the apprentice learning experience in the workplace by shadowing, coaching, observing, and guiding. **Consequently, employers are required to directly employ a suitably qualified person who can or has been approved by SOLAS to act as the Workplace Mentor.**

Employers are expected to release the apprentice(s) for induction and off-the-job training on the dates and to the location as specified by the approved college. Employers are expected to comply with all statutory Health and Safety, employment, and apprenticeship regulations as detailed in the Code of Practice for Apprenticeships. Employers must sign a Memorandum of Understanding accepting their responsibilities in placing an apprentice on the OEM apprenticeship programme.

6 WORKPLACE MENTORS

The **Workplace Mentors** have responsibility for training, completing work-based assessments, recording, and processing assessment checklists and on-the-job schedules as specified in the work-based assessments schedule for the on-the-job phases of the apprenticeship. Workplace Mentors will be experienced practitioners who meet one of the following minimum criteria:

A Level 6 qualification in a mechanical/electrical/mechatronic or related discipline and a minimum of 2 years industry experience in the sector

Or

Have completed a craft apprenticeship in mechanical, electronic, or electrical or related discipline

Or

Have a minimum of 5 years' experience working in the OEM sector

They will occupy a role in the workplace that corresponds to a senior practitioner level. They will be appointed by the employer and approved by the SOLAS Authorised Officer supported by the Programme Manager as required.

Nominated Workplace Mentors must attend a mandatory Mentoring Training Programme which will be delivered by the Coordinating Provider to ensure that they understand their responsibility in relation to training and assessing an apprentice on-the-job, to industry and awarding body standards.

A network of SOLAS AOs / TAs based in ETBs manage and support approved companies and apprentices within their region on behalf of SOLAS. The SOLAS AOs / TAs are independent office holders who work with employers, apprentices and other stakeholders to facilitate the rollout of national apprenticeships for SOLAS.

They have responsibility for assessing and approving employers to register and train apprentices[2] and for registering apprentices and monitoring employers during the on-the-job phases. All records relating to employers and apprentices on national apprenticeships are managed by the Authorised Officers.

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[2] For New Apprenticeships, the Coordinating Provider has the responsibility for assessing the capacity of the employer to deliver the curriculum. Approval of the employer to Train the Apprentice is the remit of the Authorised Officer. These are separate stages in the roll-out of the apprenticeship programmes.

7 HOW CAN AN EMPLOYER PARTICIPATE?

7.1

There are two stages for employers interested in participating in the programme.

STAGE 1:

An Employer interested in participating in the programme and employing an apprentice should:

- Complete an Expression of Interest (EOI) form available at www.oemapprenticeship.ie and return it to the Programme Manager
- Following receipt of the EOI the Programme Manager and a nominated subject matter expert will conduct a site visit to brief the employer on the requirements and assess the employer's capacity to deliver the on-the-job training
- Following the site visit and evaluation of the employer's capacity to deliver the on-the-job elements of the curriculum, the Programme Manager will forward a report to the SOLAS AO / TA
- The employer will be required to complete a Memorandum of Understanding, governing the general terms relating to the participation in the OEM apprenticeship programme

Note: *When assessing employers for any specific programme, consideration will be given to the allocation of places available in each programme in accordance with sectoral and geographical quotas agreed in advance.*

STAGE 2:

The AO / TA will proceed with the statutory SOLAS Employer Approval process including:

- Conducting a site visit and completing the statutory paperwork required for companies seeking approval to train apprentices. This will include reviewing and advising on the Code of Practice for Employers
- Where deemed suitable, the SOLAS AO / TA recommends the employer to SOLAS for statutory approval to train apprentices as OEM Engineering Technicians
- Following SOLAS confirmation the employer is statutorily authorised to employ an apprentice and formal correspondence is issued from SOLAS

7.2

How does an Employer Register an Apprentice?

> The OEM Engineering Apprenticeship is employer driven. Employers are responsible for recruiting and nominating applicants for the programme.

> Where an employer has identified an applicant for the programme, they should contact their AO / TA and arrange for the apprentices to be formally registered on the programme through the standard SOLAS Apprentice Registration process. Where the applicants meet the criteria for registration, including the Colour Vision test, Educational requirements etc., the apprentice will be registered on the programme.

> There are minimum eligibility criteria which an applicant must meet. If an employer has any doubt about the applicant's eligibility for the programme, please contact the AO / TA as early as possible to discuss.

8 ENTRY REQUIREMENTS

APPLICANTS IN THE FIRST INSTANCE MUST SECURE A PLACEMENT WITH A SOLAS APPROVED EMPLOYER AND MUST MEET THE MINIMUM STANDARD UNDER ONE OF THE FOLLOWING CRITERIA:

- Leaving Certificate with five 06 or higher which must include Mathematics.

  Or

- Leaving Certificate Applied with five passes plus Level 5 Mathematics and one year industry experience.

  Or

- Have successfully completed an approved pre-apprenticeship training course in an engineering discipline and demonstrate a proficiency in Mathematics similar to 06 in Leaving Certificate.

  Or

- A full award placed at Level 5 on the National Framework of Qualifications (EQF 4) which includes proficiency in Mathematics similar to 06 in Leaving Certificate.

  Or

- In the case where an applicant is 23 Years or over (or employed in the OEM sector for 3 Years) and does not meet the educational requirements specified above, they may apply through the Recognised Prior Learning (RPL) process.

ADDITIONAL REQUIREMENTS

The programme is delivered through English. In the event that an applicant has English as a second language, a CEFR Level B2 of proficiency in the English language is required. It is the responsibility of the applicant to provide official evidence demonstrating English language competence at B2 Level.

All applications must pass the Ishihara colour vision test (24 Plate Addition) prior to registering on the programme

9 EMPLOYERS DUTIES AND RESPONSIBILITIES

9.1

Programme Costs

There is no cost to the employer or apprentice for participation in the programme delivery off-the-job. All fees associated with the training will be covered by SOLAS. It is up to each employer to set the salary scale and pay for the apprentice. It is the responsibility of the employer to cover fulltime employment costs of the apprenticeship both during the on-the-job and when the apprentice is participating in the off-the-job training. These costs also include travel costs.

9.2

Key Employer Considerations

- Has your company the capacity to recruit and employ the apprentice on a three-year fixed, full time contract including the block release training?
- Can your company provide the apprentices with access to a range of work that will allow them develop their skills and increase their experience across a range of competencies that are included in the training plan? If you cannot provide the full range required contact the Programme Manager for assistance with Administrative Transfer[3]
- Can your company provide the apprentice with the facilities, equipment and time required for them to complete their on-the-job and off-the-job learning?
- Can your company identify and provide a suitably qualified and experienced Mentor, who will support and guide the apprentice, oversee the training and verify that the apprentice is receiving the required experience in the workplace?

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[3] Administrative Transfer is the process by which an apprentice can temporarily transfer to another company for the purpose of gaining suitable on the job experience. This will be a temporary arrangement.

10 KEY CONTACTS

Role	Named Contact	Contact details
Programme Manager CMETB	AnnaMarie Woods	annamariewoods@cmetb.ie ✆ 087 458 7344
Apprenticeship Manager LCETB	Kevin Bartley	kevin.bartley@lcetb.ie ✆ 087 770 0744
Co-ordinating Tutor CMETB	Stephen Carron	stephencarron@cmetb.ie
Training Centre Manager CMETB	Sinead McKenna	sineadmckenna@cmetb.ie
Co-ordinating Tutor LCETB	Joseph McGonagle	joseph.mcgonagle@lcetb.ie


CONTROL PANEL
ON
OFF
ERR
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Control
38/100
264
60%
85%
94%

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