

Foundation Degree Framework Specification for the Building Services Engineering Sector

A Guide for Employers and Employees

October 2008

Department for
**Innovation,
Universities &
Skills**

Introduction

A detailed Foundation Degree Framework Specification has been produced to help universities and colleges to design and deliver Foundation degrees that meet the needs of employers in the building services engineering sector (which covers Electrotechnical, plumbing, H&V and RAC industries). The Framework Specification was developed by SummitSkills, the Sector Skills Council for the building services engineering sector, with the support of Foundation Degree Forward and significant input from employers, professional bodies and trade associations, Further and Higher Education teaching staff and others.

This guide has been produced to:

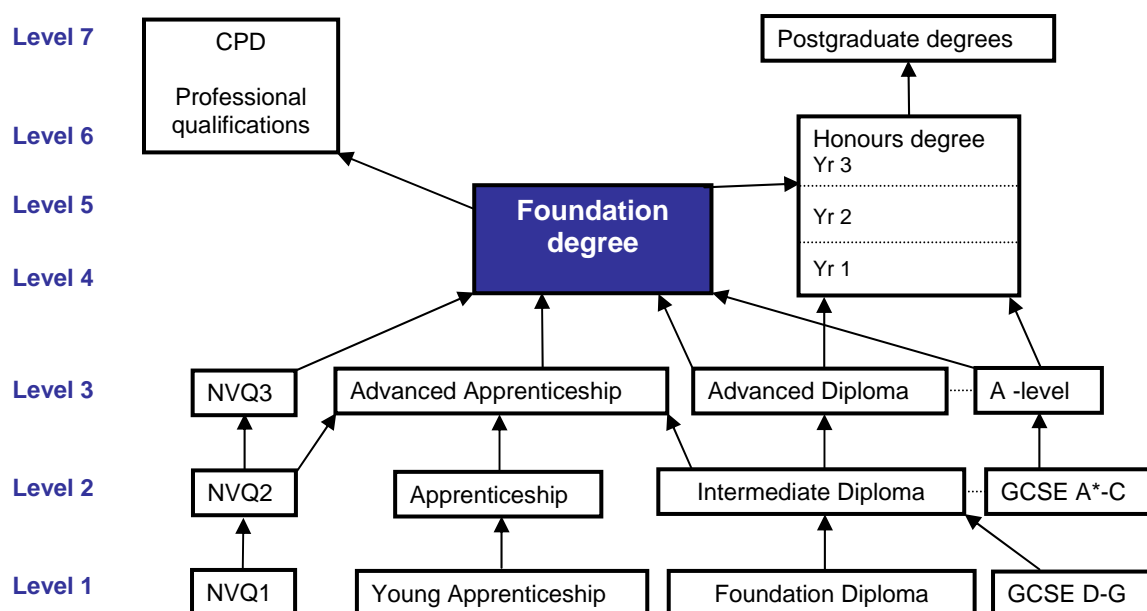
- explain to employers and employees how Foundation degrees might help them,
- outline the purpose and content of the Framework Specification,
- describe the kind of involvement that employers might have in design and delivery
- guide employers on how to get the best from Foundation degrees for their employees.

What are Foundation degrees?

A Foundation degree (Fd) is an occupationally focused higher education (HE) qualification that integrates college or university- based and work-based learning (WBL). It should be designed and delivered collaboratively with employer involvement and operate flexibly to equip learners with the skills and knowledge relevant to their employment.

A Foundation degree is broadly equivalent to the first two years of an honours degree. It is both a stand-alone qualification and provides a basis for further study which could take a number of different forms. This includes progression from the Foundation degree to a course of study equivalent to the final year of an honours degree that can lead to awarding of an honours degree.

The following diagram shows where Foundation degrees sit in comparison to other qualifications, example entry qualifications and suggested progression routes.



In the building services engineering sector, employers are increasingly turning to Foundation degrees to provide the higher level knowledge, skills and understanding they need to inform and develop the practice of the existing workforce and trainees/entrants. Employers value the work-based learning element as a means to connect principles and theory to application.

How Foundation degrees can help your business

Building services engineering is a continually evolving sector, with key drivers for change including: environmental issues; legislative and regulatory changes; global competition; new technologies and products. Everybody employed in the sector should be regularly updating their knowledge and skills to ensure continued success in a changing industry. Members of the existing workforce have told us they need accessible training and qualifications with the flexibility that Foundation degrees can offer. Many people working in the sector, including business owner-managers, need not just technical but also business and often management skills which Foundation degrees have the potential to deliver.

Employers currently nominating staff to complete Foundation degrees include national/regional building services contractors, small local contractors, some consultancies and large companies with estate or facilities management divisions, such as NHS and large retailers.

A number of employer wants may be addressed by Foundation degrees:

- work-related qualifications that are university accredited;
- designed to meet workforce development needs;
- can be customised to meet the needs of individual employers or groups of employers;
- develop technical as well as wider employment skills, management and other specific skills;
- offer a mixture of delivery modes, including work-based elements;
- can be completed part time to serve individual and employer needs;
- a recognised qualification in its own right, that gives the option to progress towards an honours degree and/or professional body recognition;
- support progression from trades or technician level to managerial and/or professional roles;
- opportunity to improve staff loyalty;
- minimise staff turnover and recruitment costs by ensuring existing staff have the skills to progress successfully within their role;
- provide a powerful combination of learning about the underpinning principles and systems relating to all building services engineering disciplines within the context of the wider built environment, alongside the practical application of these within work;

Employers who use Foundation degrees make the following points:

- The Foundation degree makes a key contribution to a workforce development and qualifications portfolio. Foundation degrees have the potential to bring more rigour to qualifications between craft and professional level, as well as supporting progression from craft and/or to professional careers.
- Being able to offer the Foundation degree is giving a positive edge to recruitment of better calibre entrants to the industry.
- The opportunity acts as a motivator to staff who want to achieve to a higher level, for example, those intending to apply for professional membership.
- The work based learning element promotes transfer and application of knowledge and skills in both directions to the benefit of the business and the course. For example, course projects can be focused on company issues and students on the Foundation degree tend to share their learning with their team and line manager.
- Students show increasing confidence and knowledge which they can apply to their work tasks. They make stronger contributions to discussions and are stepping forward to take responsibility.

How Foundation degrees can help individual employees

Students for whom building services engineering related Foundation degrees could be a useful qualification are likely to come from a range of different starting points in terms of qualifications and experience. Foundation degree students may have experience without qualifications, qualifications (academic or vocational) without much experience or a mixture of experience and qualifications.

A Foundation degree could be a useful option both for experienced building services engineers who want to add to their existing skills and knowledge so that they are able to work better in their current roles or progress their careers and/or businesses. Although employers have advised us that they do not currently wish to recruit people who have completed full time Foundation degrees straight from school, they do consider Foundation degrees to be a useful qualification to support the development of new entrants to provide training or retraining. They also benefit those who are working in the sector after a career change.

Individual learners will have different motivations, or in some cases a complex mix of motivations, when studying towards a Foundation degree. They include:

- wanting greater knowledge, skills and confidence in an existing area of work
- development of knowledge and skills in a new area – such as a technical specialism, management or commercial skills – possibly but not necessarily to support a career change or diversify a business
- wanting knowledge and skills to better manage an existing or new business
- needing to enhance knowledge and skills because of industry developments such as new regulations or technologies and preferring learning to contribute towards a qualification
- ambitions to progress with an existing or new employer
- wanting a work related HE qualification
- wanting to work towards an honours degree and/or Professional Institution recognition
- enjoyment of learning, and associated growth in confidence
- meeting employer, client, peer and/or family expectations.

Many people working in the sector are not only building services engineers but also business owner-managers who need not just technical but also business and often management skills which Foundation degrees can deliver.

The Foundation degree Framework Specification - overview

The Building Services Engineering Foundation degree Framework Specification was developed by SummitSkills, the Sector Skills Council for the building services engineering sector, with the support of Foundation Degree Forward. It has been shaped through:

- on-going guidance from a stakeholder Steering Group
- research into current provision with existing and prospective providers, both universities and colleges, and Foundation degree students
- consultation with employers, trade associations and professional bodies and education and training providers. The employers consulted represented a mix of contractors and consultancies, with companies in both categories ranging in size from small to large. Previous experience of Foundation degrees amongst employers consulted varied from those who have been involved with design of Foundation degree programmes to those with very limited prior knowledge of the qualifications. All aspects of the industry sector were included.

The Framework Specification gives universities and colleges a model for Foundation degrees that meet the needs employers tell us they have and has been designed to mesh with:

- Professional Body recognition requirements that in turn draw on Engineering Council requirements (UK-SPEC)
- Foundation Degree Forward guidance
- Quality Assurance Agency for Higher Education (QAA) requirements

The Foundation degree Framework Specification explains to providers some key principles (informed by consultation findings) that should be applied when developing Foundation degrees in building services engineering.

Content

- Modules should include an introduction to broad construction, engineering and sustainable technology principles, systems and processes and the regulatory environment in order to facilitate contextual understanding.
- There should be a strong emphasis on technical knowledge and skills.
- Mathematics and science should be sufficient for job functions and smooth progression to the final year of an appropriate honours degree.
- Transferable skills, such as communication, ICT, problem-solving, research and report-writing, analysis and evaluation, working with others, managing client relationships managing own learning and performance and career management, should be explicit and embedded in subject learning.
- It is anticipated that in the future, greater emphasis will be needed on technologies and regulations related to sustainability and the global nature of business.

Consistency

- Relative consistency across all providers regarding the above is important to employers to help build recognition of the qualification, to give them certainty about prospective employees' qualifications and – over the longer term – to enable transfer of students from one provider to another if needed.

Opportunity to specialise

- There should be the opportunity to specialise in particular aspect(s) that would fit with job function/ employment focuses. This could be for example, relate to industry sector (heating and ventilation, refrigeration, public health engineering etc), commercial (procurement, contract law, estimating etc), design (CAD etc), and business management. Specific options should be established by providers through consultation with local employers.

Delivery approach

- The delivery format of modules should match the learning requirements of the content and offer some flexibility.
- Work-based learning should be maximised to contextualise theoretical learning, to practise transferable skills in work place settings and to reflect in the course what the students are doing at work.
- Students should be encouraged to share their experiences and the practice of their respective companies with their peers and in learning sessions.

Progression

- Providers should design their Foundation degree to meet relevant professional body recognition requirements so that employees can submit Foundation degree qualification achievement as part of a route to membership, as desired.

The Foundation degree Framework Specification tells universities and colleges (in detail) how they can ensure their Foundation degrees meeting employer needs through appropriate:

- employer engagement
- access
- common core content
- recommended options content
- delivery
- work based learning
- assessment
- progression

The Framework Specification emphasises that there are a number of modes of Foundation degree delivery which colleges and universities planning to run Foundation degree should consider. The delivery format that had the most appeal for employers consulted was 'blended learning': combining a range of approaches. However the detailed Framework Specification suggests that providers consult employers about their preferred methods of delivery when planning a Foundation degree programme.

Large employers who are able to work with providers to develop a customised Foundation degree course may appreciate providers reviewing relevant in-house courses for validation and integration. The [Employer Based Training Accreditation](#) (EBTA) project, coordinated by Foundation Degree Forward can help with this.

Foundation degree Content

A clear message came through from the consultation that employers would appreciate consistency across the Foundation degrees on offer, but that there may also need to be some specialism to meet local or industry needs. To address this requirement, the Framework Specification requires that 60-70% of the content is 'core', ie to match the Framework Specification mandatory modules must cover specified learning outcomes. The remaining 30-40% should be selected from option topics suggested in the Framework Specification, with the decision about which option(s) to offer ideally being a joint decision between an accrediting institution, delivering institution (if they are not one and the same) and one or more interested employers.

There are **five 'components' in the structure of the Foundation degree:**

- Engineering Knowledge and Skills Base (15% minimum)
- Built Environment Knowledge and Skills Base (15% minimum)
- Technical Building Services Engineering Knowledge and Skills Base (30% minimum) (this component can either cover Electrotechnical, mechanical or commercial specialist pathways or a selection of options from these areas)
- Applied Building Services Engineering (15% minimum)
- Transferable Skills (15% minimum)

To view the Foundation degree structure diagram from the Foundation degree Framework Specification follow this [link](#).

Research indicated that, because of the likely range of students coming through flexible entry arrangements, many will need some 'bridging' elements to enable them to achieve at an appropriate level. Some students may need help to make a successful entry on to a Foundation degree, with access to courses such as mathematics or science, or to skills in areas like ICT or research. Employers may wish to check out the arrangements offered by their prospective Foundation degree provider.

Employer involvement in delivery and work-based Learning

Employers who want their staff to achieve a Foundation degree will be asked to engage in supervisory and/or mentoring activities to support work-based learning. Work-based learning (WBL) is a key characteristic of a Foundation degree and something employers tell us they value. The workplace is an important learning environment and WBL brings the methods and academic rigour of higher education to the curriculum of working life. WBL develops critical thinking and reflection through learning activity designed and tailored for the individual, involving elements of blended learning, accreditation and support.

Work-based learning will be designed to meet specific learning outcomes, just like college or university based study. It may involve learners engaging in consultancy or project work for employers and it will probably use the learner's own workplace as a source of learning. Whatever is the case, the WBL element of the programme must be of sufficient duration and suitably structured to enable the learner to demonstrate all the agreed WBL outcomes.

Research for the framework specification illustrated that learning does happen in both directions: most students were applying their learning to the work situation and were also drawing on work for examples and projects:

'When we'd learned about the design of an installation, then I went back to the site and looked at it. I organised it myself – it's my own initiative – but it is expected. Then at work we were doing containment for cables - I was looking at this on site and I noticed different approaches. I analysed this at college and used it in my report.'

The Foundation degree Framework Specification emphasises that work-based learning should ideally be designed so that it contributes to the business objectives of the employer, and the aspirations of the learner. Employers can contribute by offering clear opportunities for personal development and by helping the student to relate the outcomes stated in his/her learning plan to desired organisation operational outcomes. These might be derived from targets or objectives in a personal appraisal.

Employers are expected to support learners as they learn in the workplace. To support this the Framework Specification encourages providers to take into account during the design phase of the Foundation degree:

- Information on how the Foundation degree can support business objectives
- Employer agreement with the education institutions on the breadth and timescales of their involvement in work-based learning and mentoring
- Induction for employers into the provision of opportunities for and management of workplace learning or mentoring
- Mentor/supervisor training that might be offered by the education institution
- Help in managing learning activity in the workplace
- Advice and tools for monitoring student learning and progress, for example through three-way reviews between the student, employer and tutor
- Assistance in understanding assessment procedures, and contributing to assessment if possible.

Students interviewed for the research talked about employers in a range of support roles. Some had mentors – not their own manager - and these were appreciated. *'He has the voice of authority – he produced a time plan. He helps keep me on track – to meet targets, encourage me and signpost others'*. Most had line-managers who took time to discuss progress with them, for example at fortnightly one-to-ones or at annual appraisals, or to read projects. The national boss of one contacted him monthly by phone for a conversation and he

experienced this as very motivating. Some had colleagues who helped – *‘there is always someone who has done it’*.

Employer mentors who were interviewed chose to undertake the role and gained satisfaction from it. They were trained for the task and have a mentor pack, plus access to a training group and contact to provide on-going support. They saw their value as helping students to draw up and keep to a schedule, responding to requests about *‘angles’* for work projects and advice on the quality and sufficiency of the work produced, and making suggestions about managing competing work pressures. Key qualities are to be *‘approachable and inspire trust’*. Mentors felt it was important to be fully informed about the course and they appreciated sessions at the college where they were briefed and given feedback from the course leader about their mentees. They also participated in college project assessment panels in which their own student is involved and in work-based student reviews.

Foundation Degree Forward guidance suggests that employers sign up to a tripartite learning agreement [link to example agreement/in Annex C] between themselves, the learner and the university or college. This should outline the work which will be undertaken and the learning outcomes which will be assessed. Research showed some universities and colleges operating this approach. The most successful had integrated the agreement with the process of on-going student development reviews that might be education-based or employer-based.

The contributions to be made in managing work-based learning within the Foundation degree programme will require that the roles and responsibilities of learner, programme leader, tutor, mentor and supervisor are clearly defined and that appropriate systems and schedules are in place.

In addition to the mentoring and supervision that is essential to work-based learning some employers may be able to assist with delivery in other ways:

- input to help shape the design of the course
- being on the course validation panel
- conducting three-way reviews (student, tutor and employer)
- supporting work-based learning projects for own student(s)
- validating the assessment of own student’s work-based learning
- providing materials for a case study
- being a member of an assessment panel
- supporting provider staff development and updating
- participation in module evaluation and course review
- being a member of a provider’s employer network.

Choosing Foundation degrees

The decision for someone to work towards a Foundation degree may be an employer's suggestion, something an individual identifies they want to do or agreed between an individual and their employer.

Some employers and individuals will be attracted to a Foundation degree as a worthwhile qualification in its own right; some will favour a Foundation degree as a route towards achievement of full honours degree; many will make up their minds about whether they want a 'top up' to an honours degree after they have started a Foundation degree.

Individuals who do not hold academic qualifications can succeed on Foundation degrees, particularly if they have relevant sector experience and/or vocational qualifications. Individual colleges and universities will set their own entrance requirements, however our Foundation degree Framework Specification does encourage providers to be flexible in their entry criteria and to consider vocational qualifications and work based experiential learning as suitable entry qualifications. To prepare for Foundation degree studies some students may wish to complete a pre-entry maths course, or perhaps a unit from a Higher National, to address any gaps in knowledge or study skills and gain confidence before embarking upon the Foundation degree.

Once a decision has been to use a Foundation degree, or perhaps as part of the process of identifying whether a Foundation degree is the right qualification to serve your needs, factors for consideration in your choice of Foundation degree are likely to include:

- content
- location of teaching and assessment
- timing of delivery and assessment
- method(s) of delivery and assessment
- entry criteria
- content
- industry and professional body recognition

The above factors are likely to be considered when selecting any qualification or training. The Foundation degree Framework Specification has been written to both specify what a Foundation degree that meets the needs of building services engineering employers looks like, and to encourage providers to engage with employers when designing and delivering Foundation degrees.

A number of building services engineering related Foundation degrees have been running prior to development of the Foundation degree Framework Specification (and we know that *employers are happy* with some of these Foundation degrees) and others may be being developed without reference to the Foundation degree Framework Specification. The Foundation degree Framework Specification will help colleges and universities to offer Foundation degrees that meet industry needs. However employers and individuals are still strongly advised to do their own research to find out if a Foundation degree meets their specific needs, regardless of whether or not it is in line with the Foundation degree Framework Specification model.

Additional factors you may want to consider when selecting a Foundation degree might include:

- how much involvement your business will have in the delivery and assessment of the programme
- what optional content you want to access (e.g. whether a technical or managerial specialisation is sought)
- how important is progression to an honours degree and/or professional recognition
- how quickly the qualification can be achieved

- whether there's flexibility to drop on and off the course (e.g. whether a learner can stop studying for a few months if work or personal pressures demand then continue at a later date)
- what support is available for addressing gaps in previous knowledge and/or experience
- if your workplace can support all work based learning requirements
- whether you want to design a bespoke Foundation degree with a provider or use an existing programme

A number of larger building services engineering employers have worked with colleges and universities to develop bespoke Foundation degrees to serve a specific need. If you are an employer who believes Foundation degrees could help your business you may want to consider whether to enrol staff on an existing programme or to work with a college and/or university, and possibly one or more other employers to develop Foundation degree using the Foundation degree Framework Specification as a model.