

Food and drink manufacturing

Foundation Degree Framework

[Consultative draft]

Introduction

The 'Foundation Degree Framework' is intended to provide the education sector with a clear statement of the main learning needs that can be met through a Foundation Degree Qualification for the food and drink manufacturing industry. ***This short draft gives employers and trade associations the chance to see how the industry's needs are being described to the education sector.***

PLEASE LET US KNOW WHAT YOU THINK

1. Are the messages we are giving to the education system about right? If not, what needs to be changed or improved?
2. What is missing from the Framework?
3. What else would you like to see included?
4. Please look at and complete the ticklist in sections 2.2 – 2.5 (This will take 5-10 minutes).

Response

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Background information

Foundation Degrees will be important in preparing good craftspeople and production workers for promotion to supervisory, higher technician, and junior management jobs. Full-time Foundation Degrees will also be useful in developing practical skills in new graduate entrants to the food industry.

The development of the Framework is being undertaken by Skills Strategy Research Ltd on behalf of Improve, food and drink manufacturing's Sector Skills Council.

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1. INTRODUCTION

1.1 *The food and drink manufacturing industry*

In the final version of the framework this section will give an introduction to the food and drink manufacturing sector and its workforce, the areas of growth over the next few years, the skills shortages and the problems these cause employers.

1.2 *What are Foundation Degrees?*

Foundation degrees (FDs) are higher education qualifications designed to prepare people for work in higher technician and associate professional occupations. They are also well suited to the development of supervisors, junior managers and owner-managers in small businesses. Foundation Degrees contain a large proportion of work-based learning and are designed and reviewed with the food and drink industry's involvement to make sure they meet industry needs. Foundation Degrees for the food industry are expected to develop the learner's technical and work-specific skills, work-related knowledge, academic learning, generic skills and key skills.

Food and drink related Foundation Degrees are available to anyone over the age of 18 who has gained level 3 qualifications, and to those who have experience at this level but who have not as yet had this experience recognised through qualifications. General food and drink manufacturing FDs and/or those that develop skills required for specific occupations can help with career progression in the workplace. As well as this, successful FD students can progress to Honours Degrees by way of specialist "top up" courses.

1.3 *The Foundation Degree Framework*

The 'Foundation Degree Framework for the Food and Drink Manufacturing Sector' (The Framework) has been developed with the help of substantial contributions from employers, trade associations and the education sector. The Framework aims to identify the sector's skills needs and requirements in terms of knowledge, skills and understanding. Thus, it introduces the skills and learning outcomes deemed essential for FD graduates by the sector's employers.

The Framework is intended to provide guidance for the colleges and universities that are planning to develop FDs for the food and drink manufacturing sector. Validating HEIs are recommended to ensure that submissions for validation have taken account of the sector Framework.

In addition to identifying the sector's needs for skills and knowledge, the Framework confirms the general principles for the structure of FDs and presents these in the context of the sector and students that these FDs are intended to serve.

Foundation Degrees that are based on the Framework will meet the needs of the sector and thereby develop the demand they deserve. It is by creating and meeting this demand that colleges and universities will contribute to overcoming critical skills shortages and gaps and to improving competitiveness in the sector.

1.4 Responsibility of Improve

Improve is the Sector Skills Council for the food and drink manufacturing industry.

Improve's aims include:

- § Assisting recruitment to the sector, providing careers advice and promoting employment in the sector;
- § Working closely with employers and education and training suppliers to ensure that employers' needs are fully understood and that the supply of education and training is effective in meeting the needs;
- § Contributing to the sector's productivity through strategic action relating to skills;
- § Increasing the take-up of learning and qualifications that meet the sector's needs;
- § Supporting diversity in the sector's workforce;
- § Ensuring clear progression routes in the sector to encourage employees to develop and remain in the sector;
- § Developing and maintaining up-to-date National Occupational Standards.

Improve's role in the development of this Foundation Degree Framework demonstrates action in line with most of these aims. Improve will also monitor and review the Framework to ensure that it continues to meet the needs of students, food and drink manufacturing employers and the colleges and universities that provide the teaching, learning opportunities and the degrees.

2. INDUSTRY'S NEEDS FOR FOUNDATION DEGREES

2.1 Background

This Framework has been developed to meet the greatest need for Foundation Degrees in the food and drink sector, i.e. a Foundation Degree in food and drink manufacturing that focuses on the manufacturing operations that are at the heart of most of the industry's businesses.

Needs are identified under the following headings:

- § Technical knowledge and skill;
- § Key skills;
- § Generic skills;
- § Attitudes and attributes.

Students will probably not need to study all the subjects listed under the heading of technical knowledge and skill. In contrast, to achieve employability in higher technical

or associate professional levels in the sector, they will have to demonstrate all the key and generic skills and the appropriate attitudes and attributes.

2.2 Technical knowledge and skill

IN THIS CONSULTATIVE VERSION OF THE FRAMEWORK EMPLOYERS ARE INVITED TO TICK OR CHECK THE BOX IN THE APPROPRIATE COLUMN TO INDICATE IF THEY CONSIDER THE KNOWLEDGE OR SKILL TO BE ESSENTIAL/DESIRABLE OR NOT REQUIRED IN A FOUNDATION DEGREE

| KNOWLEDGE and/or SKILLS | ESSENTIAL | DESIRABLE | NOT REQUIRED |
|--|--------------------------|--------------------------|--------------------------|
| The food and drink manufacturing industry | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Food and drink manufacturing systems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Understanding the market and commercial imperatives | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Resources for manufacturing (finance; premises plant and equipment; personnel) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Supply chain | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Food science | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Other more specific science subjects:</i> | | | |
| <i>Biochemistry and analysis</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Microbiology and analysis</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Physical properties of food and their measurement</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Synthesis and metabolism of food materials</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Nutrition for human health</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Food manufacturing technology | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Other technology related subjects:</i> | | | |
| <i>Managing machine maintenance and productivity</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Power transmission in fixed plant and equipment</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Computer controlled systems and electronics</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |

| | ESSENTIAL | DESIRABLE | NOT REQUIRED |
|---|--------------------------|--------------------------|--------------------------|
| Operations management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Planning and costing production | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Manage, evaluate and improve manufacturing performance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Manage quality audits, evaluate and improve quality audit systems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Introduction to processes and product development | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Marketing and market research | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Product development | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Manage commissioning of plant and equipment (work with engineers) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Health and safety at work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Environment and sustainability considerations in manufacturing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Food safety | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Ensuring safe sources of supply of food materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Use data and information in food and drink manufacturing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Use financial information in food and drink manufacturing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Business strategy in food and drink | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Systems for small business management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Financial management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Leadership, management and motivation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Marketing, PR and selling | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Personal organisation and management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Recruitment and selection | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | ESSENTIAL | DESIRABLE | NOT REQUIRED |
|--|--------------------------|--------------------------|--------------------------|
| Workforce development | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Project management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Equal opportunities and diversity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Legislation (integrated) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Equal opportunities and diversity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| English or other languages | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Storage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Packaging | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Distribution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| Managing retail units attached to food and drink manufacturing operations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| KEY SKILLS | | | |
| Communications Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Application of number Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ICT Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Problem solving Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Team working Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Improving own learning and performance Level 3 Level 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| GENERIC SKILLS | | | |
| Ability to transfer the application of skills and knowledge | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Critical analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Creative thinking | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Decision making | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Evaluation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| ATTITUDES AND ATTRIBUTES | ESSENTIAL | DESIRABLE | NOT REQUIRED |
|--|--------------------------|--------------------------|--------------------------|
| Takes responsibility | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Uses initiative | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Enthusiastic | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Reliable | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Decisive | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Effective under pressure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Self-reliant | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flexible | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adaptable to personal change & development | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Manages personal development and technical/professional updating | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

2.6 Other food and drink related Foundation Degrees

It is likely that employees whose roles require significant levels of specialisation in logistics or manufacturing engineering would study specialist degrees in these subjects. Management focussed FDs, directed at owners of SMEs, may be of benefit to owner managers.

2.7 Flexibility

Flexibility is a key distinguishing feature of Foundation Degrees. For employed students who are studying part-time it is recommended that periods of attendance at the learning institution are limited to those that are essential.

2.8 Appropriate styles of delivery

Delivery styles for part-time learners in employment should be as flexible as possible, using methods such as flexible distance learning. For full-time students the emphasis should be on delivering a learning experience that develops industry awareness and skills for employability.

2.9 Recruitment

Recruitment to part-time FDs will only be achieved if the programme content and delivery method meets the needs of the industry. Otherwise, it is beyond the scope of this Framework to consider the attractiveness of employment in the industry and general recruitment issues.

3 THE FOUNDATION DEGREE FRAMEWORK

3.1 Introduction

This section presents the Framework. Included is guidance for providers on who to involve in the development of a FD for the food and drink manufacturing industry and how best to manage the partnership arrangement. There is detail on entry requirements, APEL, articulation and progression considerations when designing a FD; as well as the need for accessibility and the distinction between work experience and work-based learning. A range of suitably flexible options for FD teaching and learning strategies and assessment strategies are presented and the issues of workplace mentors and Personal Development Planning are examined. The section ends with guidance on skills for tutors and support staff and how the FD Framework fits with the academic infrastructure.

3.2 Role of Employers

Foundation Degree graduates must have the skills, knowledge and attributes needed to work in the sector. Therefore employers need to be fully involved in the initial design and regular review of the FDs. They also must be involved in providing needs-led learning opportunities and in assessment in the workplace. This involvement is an essential component of FDs and should be fully supported by providers.

3.3 Work-based learning

Work-based learning must promote the application of new knowledge and the development of specific skills in a way that requires students to critically reflect on their learning. Providers should be under no illusion as to the extent of their health and safety responsibility for full-time students on work placement. Adequate provision is needed for informing, training and visiting employers.

3.4 Accessibility

Foundation Degrees should enable people with a variety of experience, qualifications or no qualifications (providing they have the underlying ability) to access a higher education qualification. The potential for earning and learning in the workplace should be exploited to the full, contributing to improved accessibility.

3.5 Entry routes, admissions and APEL

Entry requirements are at the discretion of the validating university. For those without relevant qualifications, providers should develop clear criteria for assessing an individual's experience through accreditation of prior experiential learning (APEL). APEL can also be used in a post-entry context to qualify a learner for exemption from course modules.

3.6 Articulation and Progression

Foundation Degrees must guarantee successful students the opportunity to progress to at least one related honours degree. Progression opportunities and constraints must feature within the FD programme specification and prospectus. Institutions offering full-time degree programmes must assess whether part-time provision should be offered to meet the needs of employees.

3.7 Teaching and learning strategies

The most important issues are: providing learning opportunities that are compatible with employees' availability in the case of part-time FDs; and integrating workplace

and off-the job learning. Models of learning that may be preferable to employers, particularly to employers in SMEs, are those that focus mainly on distance learning, or a mix of distance and traditional learning.

3.8 Assessment strategy

A substantial proportion of assessment should focus on the application of knowledge and skills in a workplace or work simulation, in which employers should be involved.

3.9 Partnerships and consortia

FDs may be offered by individual higher education institutions (HEIs) or from one or more colleges or other organisations working in partnership with a validating HEI. Major employers should be key players in FD consortia.

3.10 Workplace mentors

Workplace mentors provide the learner with informal and structured support for learning and monitoring progress. Mentoring in the workplace is directly beneficial to the employer as it may result in higher student retention rates. Ideally, mentors should be employees in the workplace, of graduate calibre and with expert knowledge. Mentors will need to be trained and mentored for their roles.

3.11 Personal Development Planning

Personal Development Planning (PDP) is a structured, learner led but supported process that involves the student in planning and then reflecting on her or his own learning and performance. Providers should promote a structured approach to PDP and provide plenty of support in the early stages

3.12 Tutor and support staff skills

Tutors need to have up-to-date knowledge (and, preferably, experience) of the food and drink industry and, so far as is practicable, of the sub-sectors that are involved in the FD. It is extremely unlikely that a food and drink FD can be delivered without substantial investment in staff training and development.

3.13 Fit with the academic infrastructure

The Academic Infrastructure provides a means of describing academic standards and assuring their quality, through use of a series of components that allow for diversity and innovation within academic programmes offered by higher education. Programme specifications should be developed by each consortia or individual HEI provider of Foundation Degrees. The specifications should take full account of this Framework.