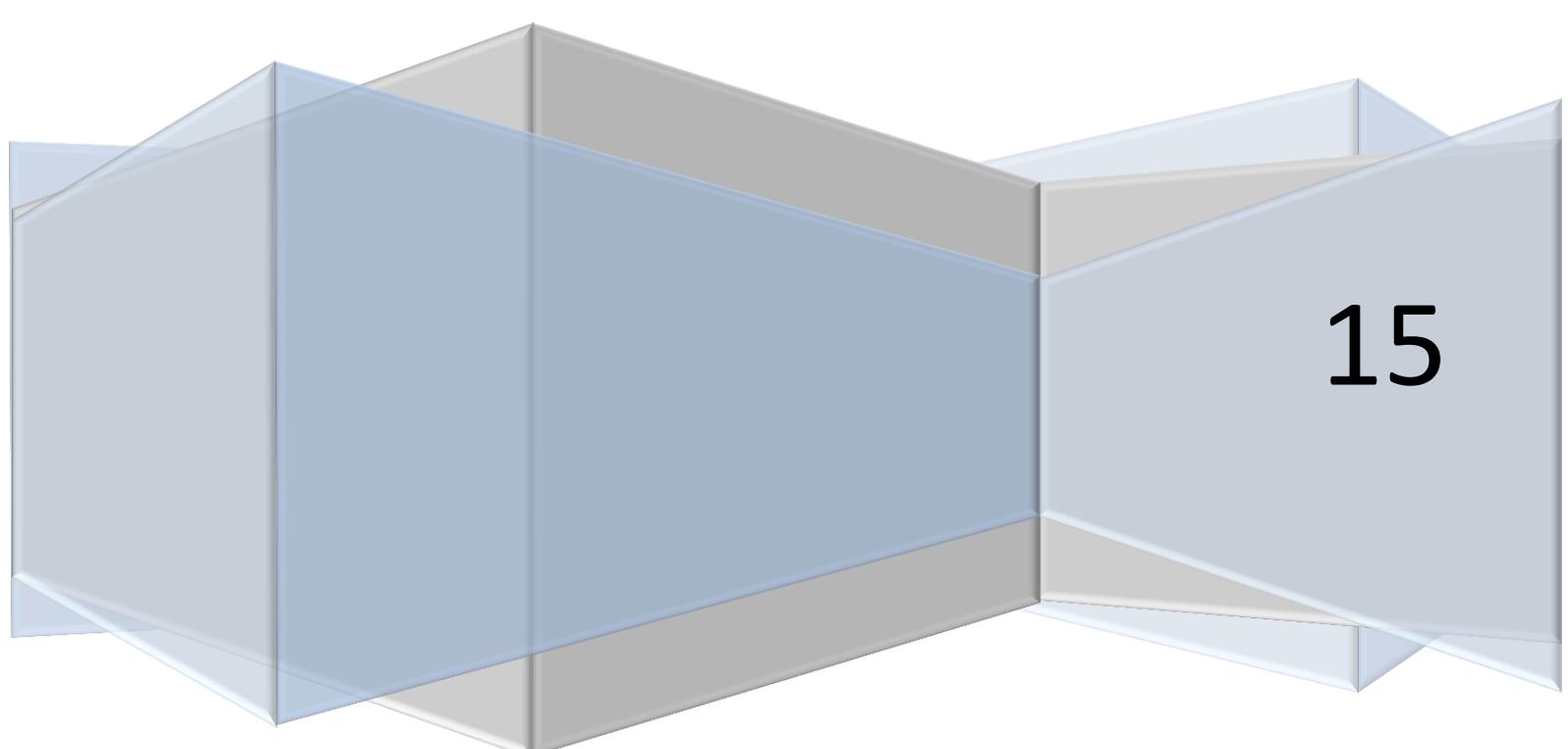


Dental Technicians Trailblazer Apprenticeship Assessment Plan Overview



15

Dental Technicians Trailblazer Apprenticeship

Assessment Plan Overview

Contents

1. Assessment Plan Overview	3
2. Foundation Degree Overview.....	4
3. Formative Assessment	7
4. Summative Assessment	9
5. Synoptic End Point Apprenticeship Assessment.....	10
6. Ensuring Independence	13
7. Delivering Consistent, Reliable Judgements	14
8. Delivering Accurate, Valid Judgements.....	17
9. Graded Assessments	18
10. Affordability	19
11. Manageability/Feasibility	20
12. Professional Body Registrations.	21
13. Implementation Plan.....	22

Dental Trailblazer – Higher Dental Technician Apprenticeship

1. ASSESSMENT PLAN OVERVIEW

This assessment specification has been developed by employers to ensure that Apprentices completing a Higher Dental Technicians Apprenticeship meet the needs of employers in terms of Skills, Knowledge and Behaviours and to be recognised as fully occupationally competent in this role. Employers have worked collaboratively with the sole purpose to embed a standardised set of training procedures and processes to further support the dental technology industry as part of an apprenticeship.

The apprenticeship standard is underpinned by a Foundation Degree in Dental Technology that has been structured to provide knowledge and understanding in learning outcomes to meet the requirements of the governing body the General Dental Council in order for successful apprentices to go forward to professional registration. Guidance for the structure of the programme has been applied from two documents – Standards for Education Provider and Preparing for Practice both GDC publications.

Dental Technology Institutions currently provide full time and part time tuition to individuals who are employed in the sector as trainees.

Nationally, education providers annually recruit ~ 180 students to part time dental technology programmes and it is this capacity that will engage with this full time Apprenticeship.

It is envisaged that the new apprenticeship trailblazer will generate a significant increase in student numbers as the process for employers is clear, consistent and provides an objective pathway for training for the very first time in this sector.

The formula used for this process will support reliable judgements, independent practice where applicable and the use of a range of graded formative and summative assessment methods. The plan also outlines the weighting for assessment and which elements are synoptic.

A standardised approach to this framework will promote, upon completion, higher quality Apprentices entering into employment within the dental laboratory sector. Additionally providers will be clear on the required rigour, robustness, breadth and depth of development that will enable the industry to meet economic and educational challenges in an area of skills shortage currently presented across the country.

This is a three year apprenticeship that may complete early due to assessment of recognised prior learning. However it is unlikely that any apprentice will be fully prepared for the end point assessment earlier than 24 months as they will need to develop all skills in each aspect of the Standard and also meet the learning outcome competences required to enter into professional registration with the General Dental Council.

2. Foundation Degree Overview

The Foundation Degree in Dental Technology is being developed with providers and higher education institutions to deliver a programme that is academically robust, challenging to the apprentice and builds excellent vocational skills required by the employment sector.

The qualification is divided into eight modules each with an academic value of 30 credits which will provide 240 credits required to achieve a Foundation Degree. See table below.

Six of the modules will provide academic development and support to the knowledge and understanding of the apprentice and these modules will be delivered by education providers using a varied range of attendance patterns including, blended and distance learning, online webinars, day release and en bloc release.

Two of the work based modules will provide a structured approach to the work based training within the employers dental laboratory environment providing supportive documentation to the work based mentor, a work based reflective portfolio, independent assessor documents for reviews and a practical project specification highlighting the range of appliances to be constructed from all dental technology disciplines. The two modules will run across the academic years of the apprenticeship.

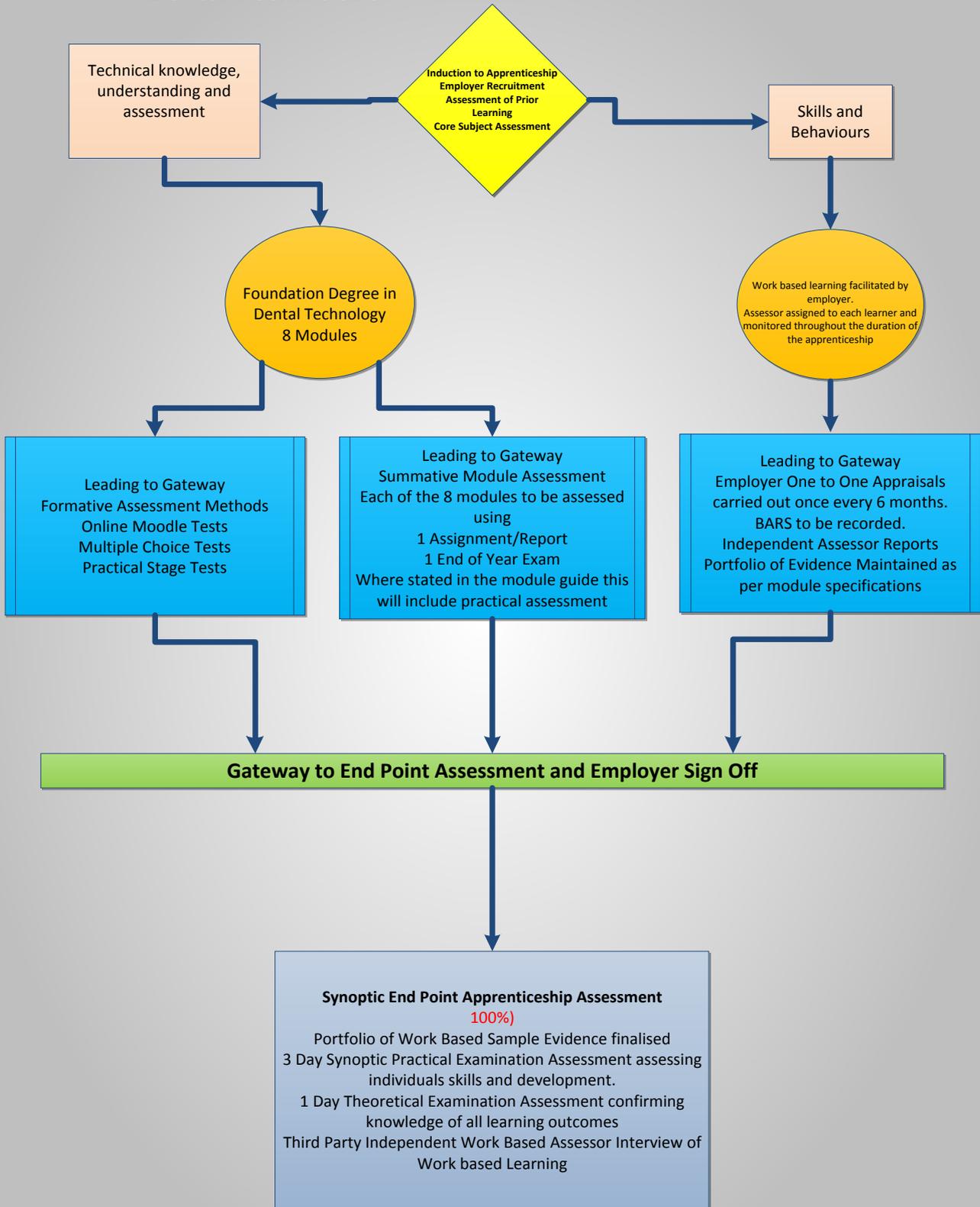
Foundation Degree – Dental Technology Design 2015

	Module Title	Module Code	Level	Value	Skills and Behaviours
Part Time Years	Year One Full Time				Module – Employment Practice (A) BIOM1404 4 30
Year 1	Oral Anatomy and Physiology and Basic Appliance Design	BIOM1401	4	30	
Year 1	Basic Dental Technology Techniques	BIOM1402	4	30	
Year 2	Introductory Dental Biomaterials Science	BIOM1403	4	30	
	Year Two Full Time				Module – Employment Practice (B) BIOM2508 5 30
Year 2	Dental Technology Techniques for Fixed Prosthodontics	BIOM2505	5	30	
Year 3	Preparing for Practice	BIOM2506	5	30	
Year 3	Dental Technology Techniques for Removable Prosthodontics	BIOM2507	5	30	

Throughout the apprenticeship learners will be expected to undertake assessment. This is broken down into formative and summative assessment.

In each of the module specification all assessments will be detailed as to the type of assessment to be used and also a year planner showing the programme of assessment for the whole of the academic year termed as a workstream.

Dental Trailblazer - Apprenticeship for Dental Technicians



3. FORMATIVE ASSESSMENT

Opportunities to engage the apprentice in formative assessment will occur in each module of the Foundation Degree in Dental Technology. This will ensure that the apprentice can demonstrate good progression towards the end point assessment, which itself will be of a high quality to provide evidence of skills, knowledge and behaviours.

The **Foundation Degree in Dental Technology** will use formative assessment techniques which may include –

- Online tests.
- Multiple Choice Questionnaires.
- Phase Tests.
- Practical stage tests.
- Presentations.
- Scenario based problem solving.

The evidence generated by this approach will be recorded by the education provider and may be requested as evidence of progress during the synoptic end point apprenticeship assessment.

Formative assessment will also be used in the **working environment** in professional development areas that could include –

- Team working skills.
- Dental Team communication techniques.
- Professional conduct.
- Compliance to regulatory requirements.

The evidence generated in the working environment will be recorded as part of the employer review as part of their staff performance management.

Close collaboration is required between education providers, employers and third party assessors to plan; deliver mentor support, provide training and assessment effectively in order to add value to academic development and to meet employer's needs with a drive for each apprentice to gain real work experience.

Employers will use their normal performance management systems to monitor apprentice progress with opportunities to provide feedback and guidance. For employers who want to use a centrally published performance management scheme templates will be provided in the employment practice module specification.

Education providers will work with the employer to ensure that progression is occurring on all aspects of the Standard.

As part of a **Quality Assurance** process it is expected that employers, education providers, work based assessors and mentors meet on a regular basis, no less than once a semester to monitor progress and resolve any issues. The progress is to be recorded in the employer's performance management documentation and also to be recorded in the Employment Practice modules in each academic year.

Apprentices are to carry out all forms of assessment set out by the academic awarding HEI, to include work based assessment processes that collectively cover all aspects of development as part of the Foundation Degree in Dental Technology. This includes the module assessment both formative and summative, maintenance of a **work based**

reflective journal and completion reviews with their work based assessor. Theory assessment and practical projects to be maintained as evidence for end point assessment.

Each module will use a range of formative assessment that will enable the provider and employer to gauge the progress of the apprentice during the programme.

The formative assessment for the work based modules will additionally include employer/employee one to one appraisals scheduled for one meeting per semester. The format of the appraisal documents will be provided in the module specification if needed by the employer. The maintenance of a reflective worked based professional log detailing the practices undertaken by the apprentice, with their reflections on performance and their development requirements is an essential part of meeting the General Dental Councils registration criteria.

The decision when an apprentice is to travel through the gateway, post completion of all aspects of the initial part of the apprenticeship will be the responsibility of the employer and education provider.

Behavioural Anchored Rated Scale –behaviours will also be recorded as when the apprentice shows a specific development and monitoring of this aspect will be part of the employer/employee reviews.

Work based assessors will have the role of supporting the apprentice in the working environment and will be required to visit the apprentice a minimum of once a semester. Although, dependent on progress the assessor may be required to visit apprentices to provide additional support. A report of progress will be required after each visit which will be added into the work based portfolio.

All of these elements will be collated as part of the employer's decision to allow the apprentice to enter into the final element of this apprenticeship standard – the synoptic end point apprenticeship assessment.

4. SUMMATIVE ASSESSMENT

Prior to travelling through the gateway to the Synoptic End Point Apprenticeship Assessment -

The academic rigour of the Apprenticeship Standard is underpinned by the apprentice completing a **Foundation Degree in Dental Technology**. In order to provide evidence mapped against the **General Dental Council's** learning outcomes and to meet the **Quality Assurance** processes of the awarding bodies, all assessment within the modules on the knowledge element will need to demonstrate robust, independent and consistent assessment.

Each module will be assessed using coursework and module end exams. The final grade for the modules are gathered from the coursework weighted 40% of the total module value and an exam at 60%.

The quality assurance processes of the HEI will be used to confirm validity of grading decisions and use **independent external examiners** to finalise grading and presentation of a report for the university's exam board.

Employers will work with providers where apprentices are able to demonstrate their **recognised prior learning** and enter into the module assessments without provider input. This will eliminate any duplication of development for the apprentice and make the process more cost and time efficient. The decision to enter the assessment, utilising this pathway, will remain the responsibility of the apprentice and employer. Effectively this is an exemption pathway and mapping against the **General Dental Council's** learning outcomes of the knowledge course will be required.

In practically based modules included in the **Foundation Degree in Dental Technology**, the **practical** assessment, excluding end of module exams can be completed at an earlier point in the apprenticeship to ensure relevance to the job role undertaken by the apprentice.

Once all modules have been successfully completed, the quality **assurance processes** set out by the awarding HEI have been met then the apprentice will be awarded a Foundation Degree in Dental Technology. This is **not** confirmation of the completion of the Apprenticeship Standard.

At this point the employer will decide to allow the apprentice to engage with the synoptic end point apprenticeship assessment. There will also be a requirement to verify the work based assessment by a third party independent assessor who has not been involved with the development of the apprentice.

5. SYNOPTIC END POINT APPRENTICESHIP ASSESSMENT

The **Synoptic End Point Apprenticeship Assessment** facilitated by **independent work based assessors** for this new Apprenticeship Standard is focussed upon the measurement of performance in realistic contexts, whether they are conducted "off-the-job" or in "live work settings". In this way, assessors are able to clearly identify and accurately measure the ability of individual apprentices to respond to complex, multi-dimensional workplace demands.

The methods employed in the end point apprenticeship assessment will use rigorous and comprehensive assessments, which between them measure performance in all aspects of the programme, in terms of skills, behaviours, theoretical understanding, and underpinning knowledge. It is envisaged that the practical examination during the end point assessment will assess the ability of the apprentice to assimilate relevant knowledge, skills and behaviour, and to apply them safely and effectively in potentially unforeseen and unfamiliar real-life situations. The ability of the apprentice to demonstrate consistent knowledge, understanding, behaviours and skills synoptically is central to achieving the standard.

Synoptic End Point Apprenticeship Assessment evidence will comprise of:

- A sample of the completed Portfolio of Work Based Evidence to assist with the selection of questions for the Independent Work Based Assessor Interview.
- 3 Day Synoptic Practical Examination Assessment assessing individuals' skills and development.
- 1 Day Theoretical Examination Assessment confirming knowledge of all learning outcomes.
- Third Party Independent Work Based Assessor Interview of Work based Learning.

The practical examination will be undertaken through a number of different exercises to ensure that a synthesis of applied skills, knowledge and behaviour can be assessed in authentic situations against the full range of competencies that comprise the occupational standard.

The **Synoptic End Point Apprenticeship Assessment** will consider the development phase of the apprenticeship and takes synoptic assessment further by capturing performance evidence in real life settings throughout the apprenticeship. Evidenced by:

- Successful completion of all formative and summative assessment as set out in each of the module descriptors delivered in all three years of this apprenticeship. This will lead to certification of the Foundation Degree in Dental Technology.
- Detailed occupational development records and reflective portfolio evidence based upon prescribed job-based tasks and assignments. This evidence is collated and presented to the final exam board and end point apprentice assessment;
- Incorporated formal behavioural assessments, based upon Behaviourally Anchored Rating Scales (BARS) in defined areas. These are completed regularly and culminate in a final check against these behaviours before the apprentice enters through the gateway to the end point apprenticeship assessment;
- The employer will use a specifically designed template to review and question the evidence presented by the apprentice and ask detailed and probing questions across a range of work task examples that demonstrate competency across the expected job role. At this point the employer must decide to sign off the evidence and present the apprentice for the end point apprenticeship assessment.
- **Independent Work Based Assessor** will make final judgment and allocate grades in accordance with the guidance provided.

The end point apprentice assessment is designed to ensure that the apprentice has to draw synoptically on their knowledge and skills from across their Apprenticeship. For example, the apprentice might be asked how they would

go about tackling a common appliance design and manufacturing issue and then be presented with a complex problem requiring them to relate it to the work and knowledge they have gained through the Apprenticeship to describe how they would problem solve it. In this way, the final interview/viva will ensure that successful apprentices are fully competent and rounded employees.

- Only on successful completion of the end point apprentice assessment will the apprentice be able to apply for the apprenticeship completion certificate.

It is planned that the Synoptic End Point Apprenticeship Assessment should take place during the final 3 months of the apprenticeship **after** the awarding of the **Foundation Degree in Dental Technology**, the technical knowledge and understanding element.

5.1 Overall Summative Evidence

The apprentice will collate and present evidence showcasing real-work experience and development of skills and behaviours completed in the final stages of the apprenticeship prior to passing through the gateway.

Evidence required will comprise of a defined range of practical dental appliance based projects set out in the Employment Practice modules A and B (see diagram on page 4). A sample of evidence from all disciplines in dental technology will be selected at random and assessed against the General Dental Council's Learning Outcomes in order to generate evidence of compliance with regulatory requirements. The pieces of work will be carried out independently by the apprentice demonstrating a link between applied knowledge and the work based assessment. In the work environment each apprentice will be allocated a mentor who is a qualified, experienced and **General Dental Council** registered **Dental Technician**. The apprentices work based evidence generated during the apprenticeship will need to be signed and confirmed as independent practice by the allocated mentor. The mentor has professional obligations that will ensure the quality of this process.

The practical work will be supported by the apprentice's reflective journal and any evidence demonstrating employment behaviours. This will include appraisals with the employer evidencing progress made in the working environment, employment behaviours using a Behavioural Anchored Rating Scale and any communication with other dental team members exceeding the requirements of the role.

Employers and education providers will assist the apprentice in formulating their evidence for the end point assessment process ensuring that it is complete, meets the requirements of the apprenticeship standard and meets the quality assurance processes.

Role of the Independent Work Based Assessor

The completed evidence will be assessed by an **Independent Work Based Assessor** who will be required to make a judgement on the quality of the work submitted. Using the evidence they will formulate questions to ask the apprentice as part of the final interview to confirm their judgement and final decision.

To evaluate the apprentice's skill development they will be expected to attend a 3 day practical examination requiring construction of a range of appliances. The activities are to be devised by the employer and education provider.

The finished practical work will be assessed by the **Independent Work Based Assessor** and will be used to form questions for the end point **Independent Work Based Assessor** interview.

To evaluate knowledge and understanding the apprentice will be required to take a theory examination evidencing all learning outcomes from the Foundation Degree in Dental Technology over the entirety of the course as part of the end point assessment. As this programme is mapped against the General Dental Council's Learning Outcomes it also confirms this as an essential criterion for successful Apprentices to become professionally registered.

The completed theory exam will be assessed by the **Independent Work Based Assessor** and will be used to form questions for the end point **Independent Work Based Assessor** interview.

The practical and theory based assessment, as part of the synoptic end point assessment, will be sourced from a moderated bank of tests with mark schemes in order to confirm consistency for all apprentice's work. Providers who engage with this standard are expected to work collaboratively with all other providers to design and write the assessment as part of demonstrating a robust quality assurance scheme. This method has been adopted to provide confidence in the assessment and ensure that it is standardised across all end point assessments regardless of the **Independent Work Based Assessor** and location of the end point assessment centre. The documentation is to be reviewed at the end of each year by providers and independent assessors to generate new assessments to avoid repetition and to reflect on the quality of the material. All documentation of this nature will be included in a suite of documents including the **course specification, occupational brief, Apprenticeship Standard, end point assessment guidance** and the end point assessment for both theory and practical element. These will be available from education providers for employers, the governing body and independent assessors

In the event that the apprentices evidence during the synoptic end assessment does not meet the requirements of the standard then it will be regarded as a fail. Future opportunities to present evidence and be reassessed at the end point assessment will be arranged by the **Independent Work Based Assessor**.

All evidence presented and reviewed by the independent assessor will be used to grade the apprenticeship. The assessor is to record the outcomes of the assessment and interview using pre-published documents demonstrating clear and accurate judgements with strong accountability tracking.

5.2 Independent Assessors Interview

The interview is a structured discussion between the apprentice and their independent assessor, focusing on the summative portfolio and how they have performed during the apprenticeship. It covers both what the apprentice has done, and the standard of their work, and also how they have approached the work. This enables the assessment to cover a broad range of knowledge and understanding, skills and behaviours, such as

- Thinking and problem-solving skills;
- Designing and constructing dental appliances;
- Customer, stakeholder and client relationships;
- Communication and behavioural skills; and
- Business and commercial understanding.

Descriptions of the behaviours are more detailed in the Occupational Brief which will be available to all education providers taking up this Standard as an **annexe** of the **Foundation Degree in Dental Technology course specification** and associated documentation. Examples will be given in order for the **Independent Work Based Assessor** to explore during the interview. This document will be provided by the education providers to all stakeholders upon the uptake of the Standard and employment of the apprentice as stated previously.

The purpose of the interview is to:

- Satisfy questions derived by the independent assessor during the assessment of evidence as part of the end point apprenticeship assessment.
- Help validate judgments relating to the quality of the work presented by the apprentice.
- Explore design and construction aspects of the practical assessment with the apprentice in order to determine underpinning knowledge gained during the apprenticeship.
- Enable the independent assessor to judge and form a decision holistically about the grade to be awarded.

End Point Apprenticeship Assessment Guidance will be written by education providers and provided to the **Independent Work Based Assessor** to support their overall decision. This will ensure that the process is consistent for each apprentice assessed and that all areas are considered in the final judgement.

To confirm the validity of the independent assessor's decisions it is expected that the assessors organise sampling documentation and processes. The moderation process will enable the Apprentice to have confidence in the awarding and grading of the apprenticeship and this stage will need to be carried out before the awarding of an Apprenticeship Certificate. It is also expected that the assessors will on occasion be accompanied by another assessor to ensure consistency. This should be performed for each cohort per academic year.

6. ENSURING INDEPENDENCE

The role of the **Independent Work Based Assessor** in the final judgement is designed to drive impartiality and independence. The independent assessors will be third party individuals with employment history including experience in the dental laboratory sector and ideally with a development/education background. They will be trained and qualified assessors using a recognised assessor qualification.

Every apprentices work will be holistically assessed by the independent assessor. They will also grade the apprenticeship based upon the work provided at the **Synoptic End Point Apprenticeship Assessment** and after the final interview.

Employers will not be able to take part in the grading and apprenticeship decisions for their own apprentices. However they may volunteer staff to be trained as independent assessors in order to assess third party apprentices.

Education providers delivering the Foundation Degree in Dental Technology to develop apprentices technical knowledge and skills; including the assessment element, ensure independence by complying with higher education institutions academic quality assurance processes. The use of independent third party external examiners to regulate summative assessment decisions during year end exam boards is a recognised process that meets the quality assurance requirements set out by the Quality Assurance Agency QAA.

7. DELIVERING CONSISTENT, RELIABLE JUDGEMENTS

The Apprenticeship Standard details the required levels of skills, knowledge and behaviours that underpin the approach to the assessment process with emphasis on judgements that are consistent, reliable in regards to occupational competence. The successful apprentice will also possess skills that are readily transferable between employers.

In order for education providers to deliver the technical knowledge element there are a range of requirements and criteria set out by the General Dental Council in their publication 'Standards for Education'. These include but not exclusively:-

- Proposed tools and materials to deliver the assessments
- Experience in delivering assessments
- Sector knowledge and understanding
- Credibility within the sector
- Capability and sector experience of their staff
- Qualified and governing body registered staff
- Internal verification processes
- Employer responsiveness
- Customer service processes
- Training and development plans
- Leadership and management arrangements
- Infrastructure and geographical coverage
- Quality assurance and quality control procedures

The awarding organisations (HEI), who are approved by the **General Dental Council** to deliver dental technology qualifications under the guidance of 'Standards for Education', have been commissioned to work collaboratively to develop the Knowledge, Understanding and Assessment qualification that will form the foundations of the consistent competence elements of this apprenticeship. This qualification will provide important evidence to support the achievement of the Apprenticeship standard. All awarding organisations who are involved with the delivery of this technical qualification; the **Foundation Degree in Dental Technology** and adherence to the **General Dental Council's** learning outcomes will ensure that there is no variation between the content being assessed, the performance evidence considered, and the standard applied between different assessment providers. It will also allow for a fair and proper comparison between apprentices employed in a range of different dental laboratory environments.

Considering the **General Dental Council's quality assurance procedures** they require submission of any new programmes detailing its conformity to their published learning outcomes for this dental care professional role. Programmes are allowed to proceed under conditions until the first cohort are presented for registration. There follows a full inspection of the education provider who must demonstrate academic rigour and that the completing graduates are fit for purpose when judged against the General Dental Council's learning outcomes.

As employers, there is a need to set a clear specification for this work and charge the awarding and provider organisations to work together on a single approach for consistency. Employers will monitor regularly on developments to ensure that they continue to align with our needs and we will sign off the final approach before it is used. If compliant with the governing body quality assurance requirements there are no other limiting that factors that will prevent education providers from offering this apprenticeship.

7.1 DELIVERING CONSISTENT, RELIABLE JUDGEMENTS as part of the Synoptic End Point Apprenticeship Assessment

The skills proficiency-based practical assessment is crucial for determining whether apprentices are adequately trained and sufficiently competent to make the transition from the off the job phase which are largely simulated environments to a work-based setting in dental technology manufacturing. It is envisaged that the assessment will include a comprehensive practical test, which will be developed with the provider organisations and employers to last 3 days. It is expected that the **Independent Work Based Assessors** will liaise with employers and providers in order to book end point apprenticeship assessment examinations and interviews in regional centres. In principle the Apprentices will be required to demonstrate competence for each stage and dental discipline encompassed in the development phases of learning in authentic dental technology manufacturing simulated scenarios. This approach ensures that the assessment is a **true** and a **reliable** measure of an individual's performance and occupational competence and also provides a tool that tests that the providers are applying appropriate rigour throughout all stages.

Independent Work Based Assessor verification of the full apprenticeship standard and the associated gateway is a key feature throughout the programme and guarantees reliable outcomes before certification can be awarded.

Independent Work Based Assessor's will be required to be trained and approved in the use of the assessment tools. They will be provided with supporting information to help ensure that all assessments are completed consistently and against the specification. The education providers will be required to have robust internal quality assurance and verification processes to ensure that the quality; consistency and validity of assessments are maintained.

Moderation of the independent assessor's judgements will be facilitated by a collaborative network of independent assessors who will attend standardisation meetings. This will ensure that the assessor process consistently meets the requirements of the Apprenticeship Standard and to meet the needs of employers.

The moderation will test that the assessments are valid, they assess fully against the Standard, provide evidence of consistency in process and to ensure that the skills demonstrated by the apprentices show dental laboratory experience and that they have received the appropriate levels of training.

Noncompliance with the Standard will trigger a corrective process with detailed remedial action points to ensure the quality process has been satisfied.

7.2 DELIVERING CONSISTENT, RELIABLE JUDGEMENTS as part of Leading to the Gateway

The knowledge, understanding and assessment programmes content has been thoroughly reviewed for all phases to ensure that it exercises and measures all aspects of the Apprenticeship Standard for Dental Technicians through only mandatory modules (see table above). The common mandatory core, with extension activities within the modules can align more specifically to sector needs, increasing the breadth, depth and consistency and rigour of standards across the programme.

The Employment Practice element of the Apprenticeship programme is completed largely "on-the-job" subject to the competencies available in the working environment. Any element of the framework that cannot be satisfied due to localised employer limitations will need to be supported and delivered by recognised providers. It is subject to both the formative assessment of knowledge, completion of the technical certificate, high-performance behavioural requirements, as well as more detailed unit summative assessment, based upon the recently revised Level 5 qualification in terms of adding greater breadth and depth of core units. This phase culminates in comprehensive performance management employer verification, endorsement sign-off process prior to passing through the gateway threshold and under taking the **Synoptic End Point Apprenticeship Assessment**.

The requirement to demonstrate total criterion-referenced competence for the phases through the competence elements of the qualification and a high-performance behavioural assessment maximises the reliability of the assessment approach.

So, by setting a very clear direction as employers, working with Awarding/Provider Organisations who we have asked to collaborate on a single set of standards and technical knowledge, understanding and assessment based certificate, we will ensure consistency in the judgements made in assessing Apprentices under this standard. There will be full visibility of any developments made in order for additional awarding bodies and education providers to take up this apprenticeship.

8. DELIVERING ACCURATE (VALID) JUDGEMENTS

This Apprenticeship programme draws from models of dental care frameworks that demonstrate excellence and well established practices within some of the leading organisations located across the UK. The delivery of the core competences has been developed and refined over many years, but the Dental Trailblazer has revised in all units the assessment techniques in order to develop its strengths, and to increase breadth and depth.

The development process guarantees validity in two fundamental ways: through the expertise and evidence that is being accessed in the development work, and in the multiplicity and rigour of the assessment regime.

The programme has involved a broad range of SME manufacturers, skills bodies and specialist training providers. As best practice the collaboration with the professional governing body has been key to ensure that programme content, coverage, performance evidence, and assessment methodologies provide valid, sufficient and accurate judgements against all aspects of the occupational standard in order for a successful Higher Apprentice to enter the end point apprenticeship assessment.

Valid and accurate judgements are reinforced by the nature and range of evidence accumulation and assessment across the framework and finally, the Independent assessor endorsement process.

These assessments methods include:

Leading to the Gateway

- the envisaged use of high tech specialist, simulation based appliance manufacture in the dental laboratories nationwide;
- Intensive, practical assessments which reflect the demanding core competences required in employment situations. These will occur during the Foundation Degree in each module as previously explained.
- the requirement for the demonstration of all of the competences in a range of contexts, and on multiple occasions, in live work-settings and the education providers;
- The use of demanding and observation-based, assessments and critical appraisals of real life dental work being carried out and of outcomes, in terms of knowledge, skills and behaviour, with stringent internal and external verification.

Synoptic Assessment

- The **Synoptic End Point Apprenticeship Assessment** will use a 3 day practical examination and a 1 day theory based examination to sample a range of evidence from any of the learning outcomes of the course and to also ensure that the apprentice has gained the essential skills and knowledge during their apprenticeship.
- the inclusion of incisive, time limited assessments that confirm standards alongside underpinning concepts, theory and knowledge;
- Independent assessor to consider all aspects of the Apprenticeship Standard during the **Synoptic End Point Apprenticeship Assessment** using the stated evidence. Also to carry out and record the outcomes from a one to one interview before making a valid and reliable judgement on the grading of the apprenticeship. Materials providing end point assessment guidance and support information for the independent assessor will assist in their final judgements and have been included earlier in this document.

The programme is introducing rigorous external, summative assessments to independently assess and ensure the Apprenticeship Standard and a progression of the Apprentice is achieved at key stages, while maintaining the more protracted, intensive, work-based assessment methods, to ensure that validity is not compromised.

Finally a collaborative, education provider led standardised template will be designed to ensure consistent, accurate and valid judgements are made by the occupationally competent independent assessor who is responsible for providing the candidate with their end grade occupational competence.

9. GRADED ASSESSMENTS

The structure of the Higher Apprenticeship for Dental Technicians incorporates practical competence-based training, develops knowledge and understanding by theory based study leading to a range of assessment processes as described earlier. The technical knowledge qualification is structured to meet professional requirements and each module assessment will be graded using a raw percentage. All of which contributes to the overall achievement of the full Apprenticeship Standard and will be represented in the final certification.

For each of the themes of this standard, knowledge and understanding and work based skill assessment is comprehensively assessed and allows the apprentices work to be judged against all of the requisite competencies at the stated academic level by means of formative and summative evidence.

Foundation Degree in Dental Technology

Each module will require one piece of coursework and one end of module exam both are weighted assessments and contribute to the overall grade for the module. All modules are mandatory and must be challenging in order to test the apprentice effectively against a minimum threshold to achieve a Pass. The module grades will be used to form an overall outcome grade based on a scale that includes Pass, Merit and Distinction. The grading is devised by the awarding body and set out in the module descriptor and generally a Pass equates to 40%+, a Merit from 65%+ and a Distinction being awarded from 75%+. The overall grade will appear on the Apprenticeship certificate.

All graded elements will be subject to a rigorous quality assurance process which includes second ghost marking of work presented on the Foundation Degree by the academic staff. A standardisation meeting to equalise grading from different provider organisations to include work that has been developed in the work environment will take place at the end of each academic year prior to the HEI's exam board processes.

Synoptic End Point Apprenticeship Assessment

The **Synoptic End Point Apprenticeship Assessment** requires the completion of two different exams; one practical and one theory. The independent work based assessor is required to mark and grade the work contributing to the overall Apprenticeship grading.

The weighting for the **Synoptic End Point Apprenticeship Assessment** and interview is as follows:-

50% Practical Assessment
30% Theory Test
20% Independent Assessor Interview.

Additionally the academic grade from the Foundation Degree in Dental Technology will be considered with the Synoptic End Point Apprenticeship Assessment.

A minimum of 65% overall grade is required to achieve the apprenticeship as an outcome from the **Synoptic End Point Apprenticeship Assessment**.

Grade confirmation will be carried out by a moderation process discussed earlier in this document.

Behavioural Anchored Rating Scale

The High-Performance Behavioural Assessments are graded using the Behaviourally Anchored Rating Scales (BARS). This system uses a five-point grading scale (**5** Outstanding; **4** Very Good; **3** Acceptable; **2** Improvement required; and **1** Unacceptable) in relation to five broad performance areas (*Working effectively in teams; Focus on quality and problem-solving; Personal responsibility and resilience; Effective communication and interpersonal skills; and Continuous development*).

10. AFFORDABILITY

The Dental Trailblazer has provided details of the indicative costs for all aspects of the development and implementation of this new Higher Apprenticeships for Dental Technicians.

Training will be the largest element of this cost, but it is also important that we factor in and pay for rigorous underpinning knowledge delivery and assessment to ensure that the successful apprentices are fully competent in this role. We have had to make assumptions such as scalability and marking fees from exam / awarding bodies, however we would not anticipate that any such assessment would exceed training costs. The Trailblazer group are currently in the process of sourcing an array of forecasted costs for the apprenticeship.

Education providers will adopt a delivery strategy that requires delivery off site in the working environment and the Trailblazers recommendation is that the programme is offered on a blended and distance learning platform. There will also need to be periods of attendance at the provider's sites and this could be formatted using attendance patterns of day release and en bloc attendance. Full guidance on attendance will be included in the course specification.

Resource sharing between education providers will strengthen the affordability of the Apprenticeship.

Webinars, online tutorials and the use of virtual learning environments will reduce the employer's commitment to releasing students for attendance at college, improving the financial effectiveness for employers.

General Assessors and Independent Work Based Assessor Fees will need to be agreed as part of the employer/provider/assessor organisation cost models. Benchmark data gathered would indicate something in the region of 1:20 ratio of Assessor to Apprentices would deliver suitable rigour and high performance outcomes. These costing's are in accordance with the funding model being trialled in 2014/15 for Trailblazers.

It is estimated that the fees for Independent Assessors for the synoptic end point apprenticeship assessment process will be £800.00 per student for the 4 day assessment event. To make this more cost effective the assessors will be required to work with employers and education providers in order to organise the end point assessment at regional centres maximising the amount of apprentices for assessment for each event. This will then encourage an economy of scale driving the average cost per apprentice lower. Dental Technology institutions are expected to support the regional exam based end point apprenticeship assessment.

However, the Dental Trailblazer still believes that it will be important to monitor how resources, and therefore funding is distributed, allocated and accessed across the sector, particularly as smaller enterprises need to be able to access the same level of equipment, expertise, training and assessment personnel as the larger manufacturing companies, without favour based upon size, location or apprenticeship volumes.

11. MANAGEABILITY/ FEASIBILITY

The Trailblazer group is working closely with a small number of pilot phase education and training providers and their representative bodies to ensure that they are ready and able to take on the role of training and assessing this new Apprenticeship. It is to be highlighted that there are only currently 7 educational institutions delivering dental technology programmes in England.

By starting small and building up, we will test and ensure the manageability and feasibility of the assessment approach and key elements and will have consideration of elements of excellent Apprenticeship practice already in use in the vocational areas of Dental Nursing and Pharmaceutical Science, giving us a high degree of confidence in their deliverability.

We are also very conscious of the need to ensure that this approach is feasible for smaller companies. The Dental Trailblazer is consulting widely across the sector about these Apprenticeship reforms and, while it has been ambitious in its objectives for securing greater breadth and depth and higher standards and quality, it remains attentive to the diversity of needs and requirements across the industry, and determined that any changes introduced are viable for all stakeholders in particular SMEs.

It is a key concern of many of the Trailblazer groups that these reforms do not lead to a two-tier system where only companies with the greatest influence and resources are able to benefit from the standard. Pilot organisations have submitted expected numbers and the plan moving forward will be to encourage wider participation, particularly from the value chain / SMEs.

We will continue to work on the development with colleagues to ensure that the synoptic end-point apprenticeship assessments are manageable, cost effective and deliverable for different types of providers, or through accessible hubs.

12. PROFESSIONAL BODY RECOGNITION

Professional Body: The General Dental Council (GDC)

The General Dental Council is the recognised regulatory body in the United Kingdom responsible for the safeguarding of the general public who experience dental procedures. They are also responsible for the registration of Dentists and Dental Care Professionals of which the role of and term 'Dental Technician' is a protected professional role.

To compliment this commitment to Dentistry the General Dental Council also regulates every education provider of dental based programmes. Education providers wishing to support and deliver apprenticeships in Dental Technology will need to comply with their Quality Assurance processes.

'Standards for Education' is a publication that sets out the responsibilities of the education providers and also details how courses are approved and regulated. This process includes a full inspection process for new courses and will envelope this Apprenticeship Standard.

Every course delivers needs to be mapped against the General Dental Council's Learning Outcomes that clearly detail the expected outcome for individuals studying dental programmes in the United Kingdom.

The General Dental Council, on behalf of the dental sector is involved in all aspects of the development of the Dental Trailblazer standards.

Representatives of the General Dental Council's Quality department are directly involved in supplying advice during the developmental stages of this project and have played an active role in meetings to discuss the appropriateness of this approach.

As stated earlier this apprenticeship includes a requirement to complete a qualification that is suitable for professional registration. Therefore, an individual is required to satisfy and provide evidence that they have met the requirements for all elements of the published learning outcomes set out by this body in their 'Preparing for Practice' document. This will ensure all registrants meet the same standards upon registration.

The apprentice cannot be considered for passing through the gateway to the end point assessment without passing the Foundation Degree in Dental Technology. This qualification will be mapped against the requirements of the General Dental Council and will in due course be subject to an inspection.

Inspections are carried out by the GDC in order to confirm conformity to their quality assurance processes and only approved providers will be able to deliver the technical knowledge programme that underpins the Higher Apprenticeship for Dental Technicians.

13. Implementation Plan

The approach to development and implementation will continue to be informed by close consultation with training providers, awarding organisations and professional bodies, as well as other assessment specialists.

The following table shows the key milestones:

	2014	2015												2016
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Occupational Brief														
Finalise occupational briefs	√													
Knowledge Assessment														
Engage with potential education providers		√												
Initiate the development of the new level 5 Foundation Degree in Dental Technology			√											
Present Apprenticeship Standard and Costing details			√											
Present draft course structure to employers					√									
Employers feedback on structure of course					√									
Module development initiated				√										
Engage with HEI's to start validation processes						√								
Initiate GDC course validation processes as part of their QA						√								
Foundation Degree in Dental Technology presented to employers for approval								√						
End Point Apprenticeship Assessment														
Employers and providers develop the specification for the end point apprenticeship assessment							√							

Recruit new independent assessors and initiate a training programme for this role									√							
---	--	--	--	--	--	--	--	--	---	--	--	--	--	--	--	--

	2014	2015												2016	
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
Interview															
Employers to develop specification for structured interview							√								
Employers and providers to develop techniques and materials and for interviews								√							
Employers approve interview processes and materials									√						
Employers test and trial interview processes									√						
Interviews ready for use										Sep 1 st					
Educational Services															
Employers develop and finalise specification for educational services					√										
Initial meeting of providers who are prepared or planning educational services							√								
Moderation Services															
Education providers to develop specification for moderation services								√							
Education providers to develop delivery arrangements for moderation services									√						
Certification and Registration															
Employers and Providers to formalise the process for professional registration									√						

Apprenticeship Starts															
										√					