Programme Specification

A statement of the knowledge, understanding and skills that underpin a taught programme of study leading to an award from The University of Sheffield

1	**Programme Title**	Doctorate in Clinical Dentistry – Orthodontics
2	**Programme Code**	DENT42 (Full-time) DENT43 (Part-time)
3	**JACS Code**	A400
4	**Level of Study**	Postgraduate
5a	**Final Qualification**	DClinDent in Orthodontics
5b	**QAA FHEQ Level**	M (UG or PG Level 8)
6a	**Intermediate Qualification(s)**	A Certificate/Diploma (Year 1) and a Masters (Year 2)
6b	**QAA FHEQ Level**	M (UG or PG Level 8)
7	**Teaching Institution** (if not Sheffield)	Not applicable
8	**Faculty**	Medicine, Dentistry and Health
9	**Department**	School of Clinical Dentistry, Academic Unit of Oral Health & Development
10	**Other Departments involved in teaching the programme**	Not applicable
11	**Mode(s) of Attendance**	Full-time or Part-time
12	**Duration of the Programme**	3 years
13	**Accrediting Professional or Statutory Body**	Not applicable
14	**Date of production/revision**	September 2014, January 2017, February 2018, December 2023

15. Background to the programme and subject area

Orthodontics is the specialism in dentistry concerned with the treatment of malocclusion of the dentition. The Doctorate in Clinical Dentistry (DClinDent) course is aimed at dental surgeons holding a primary dental degree with at least two years' experience in hospital or general dental practice and is based primarily in the Academic Unit of Oral Health, Dentistry and Society with clinical activities in the Charles Clifford Dental Hospital, which is part of the Sheffield Teaching Hospitals NHS Foundation Trust.

Oral Health, Dentistry and Society is one of the units in the School of Clinical Dentistry. The unit teaches on the undergraduate dental degree course (BDS), covering orthodontics, paediatric dentistry, Dental Public Health, psychology, sociology and behavioural science.

The School of Clinical Dentistry is directly connected to the Charles Clifford Dental Hospital (CCDH), where all patient treatment is carried out. The Department of Orthodontics in CCDH has a joint University and Hospital function and therefore is responsible for the treatment of patients needing a wide variety of orthodontic treatment. It consists of 14 chair orthodontic clinic. The hospital also has extensive dental technology laboratory facilities on its third floor, which provide a service for patients. CCDH also provides training opportunities for dental nurses, hygienists and therapists, the latter being provided by the Diploma programme in Dental Hygiene and Therapy.

This programme builds upon the basic understanding of orthodontics that will have been gained at undergraduate level by dental graduates. Applicants should also have obtained some general dental postgraduate experience before applying. Potential employment prospects include openings in specialist clinical work, research and teaching.

16. Programme aims

Upon completion of this programme, students will demonstrate:

- A systematic acquisition and understanding of a substantial body of knowledge and a critical awareness of the issues that determine successful clinical outcomes, informed by the forefront of knowledge in the specialty of orthodontics.
- The knowledge, skills, abilities and attitudes to enable independent practice of orthodontics at the standard of a specialist.
- The ability to create and interpret new knowledge through advanced scholarship, to a level that will satisfy peer review.
- The ability to conceptualise, design and implement a research project that will increase our understanding at the forefront of the discipline.
- A personal responsibility for independent learning, autonomous decision-making in complex and unpredictable situations resulting in sound judgements, planning and implementing tasks at a professional level.
- An ability to communicate clearly and professionally to specialist and non-specialist audiences and a willingness to maintain and extend these attributes through Continuing Professional Development.

The level of training provided will contribute to the requirements for a specialist in orthodontics as outlined in the curriculum of the General Dental Council but will not automatically lead to entry to the GDC specialist list.

17. Programme learning outcomes

Knowledge and understanding:	
Candidates will:	
K1	Understand the basics of obtaining a comprehensive history and undertaking a dental and orthodontic examination.
K2	Know the normal development of the dentition and facial growth, as well as deviations from normal development and the clinical relevance.
K3	Understand the importance of prevention, as part of a holistic, comprehensive treatment plan.
K4	Know the principles of determining orthodontic treatment need and undertaking a risk/benefit analysis.
K5	Know the social and psychological consequences of malocclusion.
K6	Know the principles of radiology in relation to orthodontic practice.
K7	Know about the common medical emergencies that might occur in practice and how to manage them.
K8	Understand the principles of consent.
K9	Understand the principles of clinical audit and service evaluation.
K10	Understand the need for a scientific attitude and an inquiring mind.
K11	Know the science of materials relevant to orthodontics.
K12	Know the fundamental principles of orthodontic treatment planning.
K13	Know a range of clinical and technical orthodontic treatment procedures, including their scope and limitations.
K14	Know the evidence base for treatment approaches in orthodontics.
K15	Understand how research activity can inform clinical practice.
K16	Know about the multi-disciplinary approach for the treatment of compromised (adult) patients, orthodontic surgical cases and cleft palate patients.
K17	Understand the importance of hypothesis-setting and the design of suitable projects to address questions relating to the practice of orthodontics.

Skills and other attributes:	
Candidates will demonstrate:	
S1	The ability to complete an audit project.
S2	A commitment to continuing professional development.
S3	Competence when undertaking a comprehensive and accurate orthodontic assessment and diagnosis, including determining the need for orthodontic treatment.
S4	The aptitude to communicate clearly and effectively to patients, as well as colleagues.
S5	A willingness to provide clinical care to the highest ethical and technical standards, in line with current knowledge and with the full and valid consent of patients.
S6	Proficiency in the delivery of preventive care.
S7	A broad and sound understanding of the evidence base in orthodontics, including the ability to critically evaluate a range of orthodontic procedures and techniques.
S8	The ability to perform orthodontic treatment procedures competently.
S9	The capacity to critically assess scientific papers and available evidence, such as guidelines, using a variety of information sources.
S10	Competence in developing an evidence-based and holistic treatment plan at a specialist level.
S11	Professional judgement when implementing clinical solutions in response to problems.
S12	The ability to perform orthodontic treatment procedures proficiently.
S13	The potential to become an effective and efficient leader of a multi professional team practicing in the specialty of orthodontics.
S14	Some ability to plan and undertake a research project.
S15	Some understanding of how to interpret research data and formulate conclusions for their chosen research project.
S16	Some ability to write a concise and coherent report of their chosen research project.
S17	The capacity to learn independently in familiar and unfamiliar situations with open-mindedness and in a spirit of critical enquiry.

18. Teaching, learning and assessment

Development of the learning outcomes is promoted through the following teaching and learning methods:

Seminars
Seminars will be based on students' independent study and will be used to enhance their understanding of specific areas. Student-led critical appraisals of the literature will enable the student to appraise systematically current evidence in the discipline. Preparation and delivery of evidence-based presentations will enable the student to sustain a critical argument in writing and through oral presentations (K1-17).

Tutorials
Tutorials (ad-hoc, 1:1 or group based) will be delivered by staff during the programme to enhance student's understanding, and as a forum to discuss topics in a group environment. Tutorials will be delivered by clinical experts, project supervisors and other experts, such as statisticians, in order to enhance the student's understanding and give guidance. (K1-17).

Clinical Skills Lab
Early in the programme students will attend sessions in the Clinical Skills Laboratory to learn the basic techniques of the fixed orthodontic appliance. These sessions will consist of an initial tutor-led demonstration followed by student self-directed practical work. (K13, S8, S12).

Lectures
Attendance at journal clubs and research presentations within the department will further enhance the student's breadth of knowledge. (K1-17).

Assignments
Each student completes a critical review on selected topics in orthodontics. The reviews must be fully referenced and submitted in word-processed form. (K14, K15, S2).

Problem Solving
Clinical case-based discussions: Students will present clinical cases in which they have had a significant involvement in the development of a treatment strategy and/or managed/executed the restorative treatment care of the patient. They will document the cases, in accordance with specific guidelines and templates, present this to peers and staff and be able to discuss and defend the case in a comprehensive manner. Peer-review of clinical practical work will enhance the student's ability to critically appraise their own performance. (K1-K6, K11-K16, S3-S12).

Supervised Clinical Activity
Supervised clinical activity will be undertaken on consultant-supervised clinics. These will take place on a regular basis throughout the year. Students will undertake the comprehensive clinical management of orthodontic patients. Students will be provided with an appropriate number of patients, with a wide range of occlusal anomalies, requiring a range of treatments, using a wide variety of techniques. This will provide the student with an appropriate exposure to a wide case mix and range of clinical experiences.

Teaching will be provided on a one-to-one basis with a clinical supervisor for each session and informal feedback will be provided on the clinic. Students will undertake aspects of clinical care with decreasing levels of supervision as the student attains competency.

Professional communication: Students will learn how to communicate at an appropriate level with colleagues, patients and other professionals. They will learn how to write reports, referral letters and undertake associated patient administration duties. (K1-K8, K11-K15, S3-S13, S17).

Independent study
Independent study will enable the students to undertake further private study related to the subject matter and will also include pre-course reading, preparation of seminars and self-directed practical work in the clinical skills and technology laboratories. (K10, S2, S17).

Logbooks
Reflective feedback of all course work (practical and theoretical) and formative feedback on professionalism are designed to enhance the student's learning experience. (K1-K6, K8, K11-K15, S3, S5-S12).

Research Project
Independent study will form a large part of these modules and will consist of literature searching, critical evaluation of the literature, writing the research proposal, experimental work and data collection. This spans all three years of the programme, with a phased activity. Year 1 will be the period during which a student identifies a research area and selects a potential research project (with suitable guidance). During this year they will research the relevant literature and formulate a pertinent research question, culminating in a hypotheses and aims and objectives. The literature review will be assessed at the end of the first year.

During Year 2 the students undertake a module which is aimed at introducing the students to research methods in dentistry, as well as an introduction to basic statistical methods. This will help them develop a research protocol, which forms part of the assessment in this module, which occurs at the end of the first semester of the second year. Data collection will start during Year 2.

Year 3 will include completion of data collection, data analysis and the write up of the project, which will be assessed at the end of Year 3. This unit aims to develop the student's general ability in the creation and interpretation of new knowledge, through original research by demonstrating a detailed analytical understanding of the investigations undertaken and the interpretation of data. This should lead to the construction and exposition of knowledge that has been acquired, and that will extend knowledge at the forefront of the discipline and be of a quality that will satisfy peer review and merit publication.

Provision for the acquisition of information literacy skills has been planned with the Faculty Librarian for Medicine. The delivery of these 'information literacy skill' sessions will be carefully timetabled and integrated within the curriculum, at a time to suit the student's needs.

Supervisors will provide appropriate training and monitoring in the early stages. Tutorial meetings will be arranged with project supervisors to discuss progress and give guidance. Where appropriate other experts, such as statisticians will be consulted during the protocol development, to enhance data collection, data entry and analysis. *Ad hoc* tutorials may be arranged with these experts to develop the students' understanding. Writing up the research as a final project report and as an article for submission to a scientific journal will be mentored by the project supervisor. (K10, K14, K15, K17, S7, S9, S14-16).

Audit/Governance
The students will be expected to attend and contribute to the departmental journal clubs. They will also be required to attend departmental audit meetings and annual updates on dealing with medical emergencies, clinical governance and waste management provided by the STH NHS Trust. They will undertake an audit project. (K9, S1).

Opportunities to demonstrate achievement of the learning outcomes are provided through the following assessment methods:

Formative assessments: Monitoring of student progress is by a process of continuous assessment. Feedback will be provided by their clinical supervisors and students will be encouraged to self-assess.

Summative assessments will be undertaken at the end of each module and will include the following components:

- Written examination papers in the form of structured short answer questions.
- Oral and written presentation of research and audit project work undertaken by the student.
- Clinical examinations will be based on oral and written presentation of cases treated by the student, and an ability to diagnose and treatment plan cases not seen previously by the student.

The award of the degree will depend upon satisfactory performance in all the modules.

19. Reference points

The learning outcomes have been developed to reflect the following points of reference:

The UK General Dental Council's Curriculum (June 2010) for Specialty Training in Orthodontics.

The Network of Erasmus Based European Orthodontic Programmes (NEBEOP).

The curriculum for the Intercollegiate Membership in Orthodontics and the Membership in Orthodontics of the Royal College of Surgeons of Edinburgh.

The guidelines of Masters' and taught doctorate courses within the Faculty of Medicine, Dentistry and Health at the University of Sheffield.

The Mission Statement of the University of Sheffield; http://www.sheffield.ac.uk/ourplan/

The UK General Dental Council's Lifelong Learning Statement; https://www.gdc-uk.org/professionals/cpd

The Quality Assurance Agency for Higher Education in England and Wales Benchmark Statement with regard to provision of subject knowledge and transferable skills.
http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

20. Programme structure and regulations

The programme runs from October to September and is undertaken full time in three academic years (a part time equivalent is available over 4 years). The candidate will need to complete the Final Examination for the Degree before completion. The programme consists of two 15-week semesters (October to January, January to July) followed by a period from July to September per year for completion of clinical work and the dissertation.

Details of the programme are as follows:

DENT42 DCLINDENT ORTHODONTICS

1.		A person may be admitted as a candidate who is registered on the appropriate part of the Professional Register, or is a recognised graduate in Dentistry, and who has completed not less than two years work as a dentist in a clinical setting deemed acceptable by the Board.		
2.		The programme of study shall be pursued for three years full-time (or a part-time equivalent, which would normally be 4 years).		
3.		A candidate shall take:		
(a)	**Year 1**	DEN602	Principles of Clinical Management (Semester 1)	15

		HAR6114	Systematic reviews and Evidence Synthesis Principles	15
		DEN429	Principles of Clinical Orthodontic Practice I	30
		DEN408	Clinical Orthodontic Practice Programme I	90
		DEN601	Research Methods in Clinical Dentistry	15
		HAR6035	Introduction to Statistics	15
			Total credits Year 1	180
(b)	**Year 2**			
		CDH609	Principles of Clinical Orthodontics II	30
		CDH610	Orthodontic Case Studies	30
		DEN425	Clinical Orthodontic Practice Programme II	90
		DEN418	Research Project Literature Review	30
			Total credits Year 2	***180***
(c)	**Year 3**	DEN409	Clinical Orthodontic Practice Programme III	90
		DEN414	Orthodontic Thesis	90
			Total credits Year 3	***180***
			TOTAL CREDITS	***540***

4.		A candidate may proceed to the Orthodontic Thesis only on satisfactory completion of the units listed at 3(a) and 3 (b) above.
5.		A candidate who has been awarded *three hundred and sixty credits* in respect of the units listed at 3(a) and (b) above shall be eligible for the award of the Master of Clinical Dentistry in Orthodontics.
6.		A candidate who has been awarded *one hundred and eighty* credits in respect of the units listed at 3(a) and (b) above shall be eligible for the award of the MMedSci in Orthodontics.
7.		A candidate who has been awarded *one hundred and twenty* credits in respect of the units listed at 3(a) and (b) above shall be eligible for the award of the PG Diploma in Orthodontics.
8.		A candidate who has been awarded *sixty* credits in respect of the units listed at 3(a) and (b) above shall be eligible for the award of the PG Certificate in Orthodontics.

Detailed information about the structure of programmes, regulations concerning assessment and progression and descriptions of individual modules are published in the University Calendar available on-line at https://www.sheffield.ac.uk/calendar

21. Student development over the course of study

The small numbers of students on the programme and frequent contact with tutors means that assessment and feedback is a regular process. All clinical tasks are supervised and informally assessed, and this represents part of the formative assessment and feedback process. Students have regular feedback on their progress and development throughout the programme of study. More formal assessments are arranged through the module assessments. Students will be expected to progress over the three years from basic procedures, within the competency of a general practitioner, to procedures and standards expected of a specialist. Satisfactory progression will be evaluated each semester.

22. Criteria for admission to the programme

Detailed information regarding admission to programmes is available from the Course's webpages: https://www.sheffield.ac.uk/postgraduate/taught/courses/2024/orthodontics-dclindent

23. Additional information

The Dental School in Sheffield was first established in the early 1900s and Sheffield University has been awarding a degree in Dental Surgery since 1922. The current Dental School building was opened in 1992.

On the ground floor of the School you will find our 120-seat lecture theatre which was upgraded in 2012 and is equipped with up-to-date audio visual equipment. There are also six seminar/tutorial rooms, an IT Suite with 20 workstations and an internet café / common room. The School has wireless connectivity and postgraduate students all have access to study rooms and computer facilities.

On the second floor there is a 54-unit, recently upgraded, Clinical Skills Laboratory with a dental chair for demonstrations via a live video link and computers offering computer aided learning packages. In the annexe to the School, we have a 40-unit Dental Technology Laboratory with associated materials processing facilities.

In 2009 the School opened a new wing which houses purpose-built and state of the art research laboratories for cell and tissue culture, microbiology, electron microscopy, histology, histochemistry and immuno-cytochemistry, biochemistry, molecular biology, proteomics and materials science.

The Dental School is connected to the Charles Clifford Dental Hospital., A redevelopment completed in 2009 included the upgrading of many areas within the hospital including new clinical facilities.

The various clinical departments are equipped with dental units in both open clinics and small side clinics. Facilities for treatment under inhalation anaesthesia as well as conscious sedation and recovery are available. The Dental Hospital has a well-equipped radiography department and we also have our own oral pathology laboratories which provide support services for all clinical areas. A dental production laboratory supports both undergraduate and postgraduate teaching and learning, as well as providing service to Trust patients. All these facilities are used by undergraduate and postgraduate dental students. All students are provided with clinical attire. Changing rooms and canteen facilities are available in the basement of the Dental Hospital.

For further information prospective students are directed to the School web pages at http://shef.ac.uk/dentalschool/

This specification represents a concise statement about the main features of the programme and should be considered alongside other sources of information provided by the teaching department(s) and the University. In addition to programme specific information, further information about studying at The University of Sheffield can be accessed via our Student Services web site at http://www.shef.ac.uk/ssid.