PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	PhD (Integrated)
4	**Programme Title**	Orthodontics
5	**Programme Code**	8194
6	**Programme Accreditation**	The Specialist Advisory Committee (SAC) in Orthodontics on behalf of the Joint Committee for Specialist Training in Dentistry (JCSTD) which reports to the General Dental Council and the Dental Faculties and Councils of the Royal Colleges of Surgeons.
7	**QAA Subject Benchmark(s)**	
8	**FHEQ Level**	D
9	**Date written/revised**	10/3/08

10 Programme Aims

The aim of the program is to enable dentists to acquire advanced skills and knowledge in the field of Orthodontics and research. The course is designed to enable the participants:

1) gain advanced knowledge and understanding of orthodontics
2) to undertake a general training in research methods and management within orthodontics
3) to undertake a specific training in research methods and techniques relating to an approved research project
4) to undertake a research project which will make an original contribution to knowledge and understanding in orthodontics.
5) to gain a range of professional and key skills which will enable them to engage in teaching and/or research at an advanced level in higher education or in a senior professional capacity in other fields of employment.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas.

Knowledge and Understanding

On completing the programme students should have acquired:

A1. The ability for the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the orthodontics, and merit publication.

A2. A systematic acquisition and understanding of a substantial body of knowledge which is within and directly related to Orthodontics. A critical awareness of current problems and insight, much of which at, or informed by, the forefront of the field of study and area of professional practice

A3. The general ability to conceptualise, design and implement a project for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust

the project design in the light of unforeseen problems;

A4. A detailed understanding of applicable techniques for research and advanced academic enquiry.

A5. A conceptual understanding that enables the student to:

- Diagnose anomalies of the dentition and cranio-facial structures
- Understand the aetiology of malocclusion
- Understand the clinical approach to management of patients and the timing of treatment appropriate to physical and psychological development
- Understand the principles and practice of orthodontic treatment, including an understanding of a variety of treatment methods
- Understand the principles and practice of cephalometry
- Evaluate critically scientific literature and carry a research project through to completion and to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences.

Teaching and Learning Methods

Teaching for A1, A3 and A4 is by engaging in research dissertation and statistics/research methodology courses run by the Faculty of Medical Sciences Graduate School; the preparation of protocol for the research project, development of research timetable, data collection, its analysis and completion of thesis

A2 and A5 is mainly by pre-arranged tutorials, the majority of which are completed during the first 2 years of the course. Each tutorial has a structured reading list prioritized where necessary into essential and recommended reading. These lists are reviewed annually. There is a weekly journal club in which students are expected to participate. Students are given clinical teaching whilst treating patients with orthodontic problems. Students are expected to attend the Dental Hospital and Regional Clinical Audit Meetings.

Students are expected to prepare for each tutorial and to engage in tutorial discussion. Each student has a research project and is allocated suitable patients for diagnosis and treatment.

Assessment Strategy

A1, A3 and A4 is assessed by the PhD progress panel in the annual reviews and reports. The research protocol and draft literature review is assessed at the end of the Year 1 and the thesis submitted in Year 5.

A2 is assessed at the end of Year 3 by set essays and a short answer paper. In-course essays are set during Years 2, 3 and 4. Practice questions are set in the run up to the written examination.

A2; A5 At the end of the Year 4 a clinical exam of knowledge and patient management is undertaken. Additionally, students are expected to undertake one of the Royal College exams for Membership in Orthodontics (MOrth) towards the end of the Year 4

Intellectual Skills

On completing the programme students should be able to:

B1. Initiate, develop and manage applied research, contributing to the development of new techniques and ideas.

B2. Assess, diagnose and formulate appropriate orthodontic treatment plans including an organized sequence of delivery and prediction of its outcome

B3. Deal with complex issues both systematically and creatively, make sound judgements

in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences

B4. Demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional level

Teaching and Learning Methods

B1: Students are expected to develop a research question and a research protocol in the first year; implement data collection in years 2 to 4 and analyse the data and complete the thesis in Year 5

B2 to B4: During years two to four, students are allocated patients for treatment under supervision, requiring increasingly complex work as the course progresses. Diagnostic and treatment clinics are timetabled specifically for students. There are a number of resource days shared with members of the Northern University Consortium (NUC); Leeds, Newcastle, Birmingham, Sheffield, Liverpool and Manchester.
In Years 1 and 5 there is limited clinical activity. In year 1, this is restricted to diagnostic and treatment. In year 5 this will include advanced multidisciplinary clinics in Cleft Lip and Plate; Hypodontia; Orthognathic surgery; Paedodontic and Restorative

Assessment Strategy

B1 is assessed at end of Year 1 by submission of literature review and in Year 5 by submission of the completed thesis and its associated viva.

B2, B3 and B4 are assessed informally for each patient management session. Informal feedback by teachers is given during sessions and agreed grades recorded reflecting clinical work, patient management and professional ability. All formal and informal assessment is recorded in a student held portfolio.

Formal assessment of B2,B3 and B4 occurs in Year 4 clinical exam as described in section A

Practical Skills

On completing the programme students should be able to:

C1. Assess prognosis of the preferred orthodontic treatment option based on clinical outcome studies and audit

C2. Recognize the need for continuous reassessment of patient response as treatment progresses

C3. Formulate a clear orthodontic laboratory prescription and understand the technical procedures involved

C4. Process letters of referral, to prioritise appointments, and liaise with general dental practitioners

C5. Treat patients with respect and without prejudice

C6. Appreciate their own limitations and to take advice or refer a patient when appropriate

C7. Plan interceptive orthodontic measures

C8. Present research data, outcomes and implications to specialist and non-specialist audiences.

Teaching and Learning Methods

C1-8 is taught by case seminars, tutorials and clinical chair side teaching of diagnosis and patient care using a combination of problem lead, case based, didactic, and experiential learning. Students are expected to plan and manage the treatment of their patients and

present at case conferences.

Assessment Strategy

C1-C8 is assessed informally for each patient management session. Informal feedback by teachers is given during sessions and agreed grades recorded reflecting clinical work, patient management and professional ability. All formal and informal assessment is recorded in a student held portfolio.

Each student maintains a learning portfolio which encourages reflective learning and personal development planning as well as recording meetings, formative and summative assessment. These form part of the Annual Educational Regular In-Course Appraisal (ERICA) discussion between the DPD and students

Formal assessment occurs in the Year 4 clinical exam as described in section A

Transferable/Key Skills

On completing the programme students should be able to demonstrate:

D1. Appropriate IT skills for data analysis and documentation

D2. Effective use of library and other information retrieval systems

D3. Personal professional development; that academic (both research and teaching) and clinical skills need to be constantly reviewed, challenged and updated

D4. The ability to work in harmony with peers, support staff and teachers with a view to becoming a team leader

D5. Continue to advance their knowledge and understanding, and to develop new skills to a high level; critical skills necessary for scientific appraisal and enquiry

D6. Demonstrate a critical attitude towards outcome of research and patient treatment and participate in professional audit

Teaching and Learning Methods

D1 and D2 basic IT skills i.e. word processing, library skills and Medline during induction week. Advanced word processing and use of Endnote bibliographic software during Year 1 in conjunction with literature review writing. Statistical course (Year 1) and statistics applied to research project (Years 2 to 5).

D3 is by the ongoing monitoring, and iterative development of their research project overseen by the student's research supervisors.

D4-D6 is by working with staff of all grades (clinical and non-clinical) and working with their clinical training peer group in the parallel MSc programme. Students will be expected to assist in some limited undergraduate teaching in Years 4 and 5 and participate in clinical audit

Assessment Strategy

D1-D6 is indirectly and directly assessed by the ERICAs, written and clinical examinations, research and clinical feedback as described in sections A to C.
Students are expected to participate in and present their research at scientific meetings during their 5 years

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The 5 year programme (15 semesters comprises 3 main areas:

1. A research project and thesis demonstrating a candidate's application of scientific method

2. Supervised clinical and laboratory practice involving treatment planning, clinical procedures and technical work for selected cases, including some complex treatments

3. Review of the clinical and scientific evidence base for Orthodontics by means of tutorials, case seminars and practical classes

Students can expect a high degree of clinical exposure under expert tuition (students have up to 5 treatment sessions and one diagnostic clinic session per week in years 2-4). There is excellent technical support and students are encouraged to liaise with the laboratories. Students are not expected to undertake technical laboratory procedures.

Each student keeps a learning portfolio which encourages reflective learning and personal development planning as well as recording meetings, formative and summative assessment. These form part of the Educational Regular In-Course Appraisal (ERICA) discussion between the DPD and students

(ii) Curriculum and Structure

The foundation for clinical practice consists of a clinical skills and laboratory course completed during the induction weeks which the student must complete satisfactorily, prior to seeing patients under supervision. Students will normally be given no more than two opportunities to satisfactorily complete the foundation for clinical practice course. During all 5 years students see patients for treatment and diagnosis.

The seminar programme is based on 9 themes:

- Basic orthodontic subjects.
- General orthodontic subjects.
- Orthodontic techniques.
- Biological sciences relevant to orthodontics.
- Multidisciplinary treatment procedures.
- Specific treatment procedures.
- Information technology.
- Management of oral health.
- The practice and business of specialist orthodontic practice.

The tutorials are undertaken in Years 2-4. The research project is spread across the all 5 years. During Year 1; research project aims, literature review and pilot studies must be completed. It is a requirement for progression from Year 1 to Year 2 that the draft literature review be handed in for assessment and comment at the end of July of the first year. Practical work may be spread between all years and writing-up completed for submission of the thesis in Year 5.

Key features of the programme (including what makes the programme distinctive)

Combined research training and clinical training in orthodontics. The students will complete a PhD research projects and thesis. Students will also undertake clinical training to enable them to practice as a specialist in orthodontics.

Programme regulations (link to on-line version)

http://www.ncl.ac.uk/regulations/programme/

13 Criteria for admission

Entry qualifications

A Dental Degree recognised by the GDC as being sufficient for the purposes of temporary registration (temporary registration is not required, as clinical practice is performed under direct supervision as a university student).

Admissions policy/selection tools
Applicants are required to have two or more years of dental practice experience at the start of the programme.

Non-standard Entry Requirements
None

Additional Requirements
Following directives from the Department of Health, all health care workers new to the NHS, including dental students, must have standard immunisation and receive health clearance before contact with patients. Where possible screening for hepatitis B, hepatitis C and HIV will be carried out prior to registration on the Integrated PhD in Orthodontics by an occupational health provider appointed by the University. Any candidate who is found to be infected with blood borne viruses (BBVs) or who have not sero-converted following Hepatitis B immunisation or booster will either not be accepted onto the programme or in the case of students for whom health clearance has not been confirmed at registration, not be allowed to continue on the programme.

Level of English Language capability
Overseas and EC students need at least IELTS 6.5 (TOEFL 577) in all components

14 Support for Student Learning

Induction
During the first week of the first semester students attend a week long induction programme in orthodontics alongside the 1st year MSc programme. New students are given a general introduction to University life and the University's principle support services and general information about the School and their programme, as described in the Degree Programme Handbook. Students will be given detailed programme information and the timetable of lectures, practical's, tutorials, etc. The International Office offers an additional induction programme for overseas students. See
http://www.ncl.ac.uk/international/arrival/

Study skills support
Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the Induction Programme. Students are tutored on their approach to their research projects.

Numeracy support is available through Maths Aid. Further details are available at:

http://www.ncl.ac.uk/library/news_details.php?news_id=159

Help with academic writing is available from the Writing Centre. Details can be obtained from Alicia.Cresswell@ncl.ac.uk

Academic support
The initial point of contact for a student is with their supervisors; thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Curriculum Committee via the student representatives.

Pastoral support
All students are assigned two supervisors; one will act as their tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. Details of the personal tutor system can be found at
http://www.ncl.ac.uk/teachingexcellence/support/pgtutor.htm

In addition the University offers a range of support services, including the Student Advice Centre, the Counselling and Wellbeing team, the Mature Student Support Officer, and a Childcare Support Officer, see http://www.ncl.ac.uk/postgraduate/support/

Support for students with disabilities
The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies. For further details see http://www.ncl.ac.uk/disability-support/

Learning resources
The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities, see http://www.ncl.ac.uk/undergraduate/degrees/facilities/index.phtml

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-sessional language training can be provided.. See http://ncl.ac.uk/langcen/index.htm

15 Methods for evaluating and improving the quality and standards of teaching and learning

Course element and theme reviews
All course elements and themes are subject to review by questionnaires which are considered by the Curriculum Committee. Changes to, or the introduction of new, elements or themes are considered at the Curriculum Committee. Student opinion is sought at the Curriculum Committee via student representatives on the committees.

Programme reviews
The Curriculum Committee conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee.

External Examiner reports
External Examiner reports are considered by the Curriculum Committee. The Committee responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with student representatives, through the Curriculum Committee.

Student evaluations
All elements, themes, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Curriculum Committee.

Mechanisms for gaining student feedback
Feedback is channelled via the Curriculum Committee.

Faculty and University Review Mechanisms
The programme is subject to the University's Internal Subject Review process, see http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/index.php

Accreditation reports

The NHS Specialist Registrar Training Programme, which reflects the PhD (Integrated) in Orthodontics and the MSc in Orthodontics, is inspected every six years by the Royal College of Surgeons' Specialist Advisory Committee in Orthodontics and the Northern Deanery for Medicine and Dentistry

16 Regulation of assessment

Pass mark
On each occasion of Progress Assessment achievement of outcomes defined for each domain will be assessed, and performance for each classified according to attainment, within the range:

M Merit

S Satisfactory Pass

B Borderline

U Unsatisfactory

Course requirements
Progression is subject to the University's Degree Progress Regulations, Taught and Research Progress Regulations and Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs)

Examination

The examination, which must be passed as a whole, consists of the following:

Common Marking Scheme

The examination, which must be passed as a whole, shall consist of:

Part I written examination (2 papers)

Part II (a) clinical examination;
(b) oral examination.

Part III (a) an assessment of a thesis submitted by the candidate on an approved subject;
(b) an oral examination on the thesis (if required by the examiners).

Resit examinations:
A candidate who fails any part of the examination may be allowed to resit the exam within 6 months, subject to approval of the Board of Examiners

Grading system

The scheme, UBSM, uses the following grades and descriptors:

M Merit
S Satisfactory
B Borderline
U Unsatisfactory

Role of the External Examiner

An external examiner for the course is appointed by the Faculty of Medical Science Teaching and Learning Committee (FTLC) following recommendation from the Curriculum committee. The External Examiner is a distinguished member of the Dental Science community and a specialist in Orthodontics.

The External Examiner's role is that of moderator. In order to do this, the external examiner:

- Sees and approves examination questions

- Sees examination scripts, comments on the standards of marking and moderates discrepancies in double marking
- Examines theses
- Attends the Board of Examiners meeting
- Reports to the University regarding standards, and comparability of standards

In addition, information relating to the programme is provided in:

The University Prospectus (see http://www.ncl.ac.uk/postgraduate/)

The School Brochure

The University Regulations (see http://www.ncl.ac.uk/calendar/university.regs/)

The Degree Programme Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.