



Professional Doctorates

Programme specification

Programme definition (approved by Senate June 2014)

A professional doctorate is defined as a programme that requires the creation and interpretation of new knowledge, through original research, advanced scholarship and innovations in professional practice. A professional doctorate programme differs from a 'traditional-route' research degree programme (a PhD) in that candidates are required to make both a theoretical and applied (within the context of the relevant profession or specialism) contribution to knowledge.

New Professional Doctorate awards (approved by EQSB July 2023 and TBC council and senate):

Professional Doctorates: Proposal for new awards of DClinProgrammes (to encompass programmes which could include Doctor of Clinical Medicine (DClin(Med)) and Doctor of Clinical Surgery (DClin(Surg))

Programme Title	Medicine
Duration/mode of study	FT – 3 years / PT 6 years
Name of final award	DClin
FHEQ level of final award	8
Name of interim awards	MSc/PgDip/PgCert in Clinical Medicine or According to the number of credits passed (Note: If student exits having only completed L7 modules all taken from an existing single programme then they would exit with PgCert or PgDip from the originating programme (eg healthcare research methods or global health))
FHEQ level of interim/exit award	8
Proposed start date for first cohort	September 2025
Responsible school(s)/institute(s) (please identify lead dept)	FMD – QMICA (programme management to be based in the William Harvey Research Institute)
Subject Examination Board (that will confirm taught module results)	L7 modules will be examined by relevant existing institute exam boards. L8 modules and the overarching programme will be examined by a newly constituted 'Professional Doctorate' exam board, initially situated within WHRI
Name & contact details person responsible for the management of the programme	Professor Maralyn Druce

Programme Outline and Aims

Please provide a brief description of the programme, summarising the programme content, and the distinctive features it offers students. This should be consistent with the programme descriptions in handbooks, website(s) and prospectus.

Programme Rationale

This programme is part of a wider proposal encompassing two programmes: DClín (Med) and DClín (Surg) under the umbrella of the QMUL degree award title 'DClín...' The programmes are identical in structure, however the level 8 components are differentiated according to the background of the students together with their clinical and research interests, which will fall into the medical or surgical sphere.

The DClín (Med) and DClín (Surg) would be the initial new programmes within the developing Queen Mary International Clinical Academy. The vision for this Academy is to establish a first-in-UK world-class International Clinical Academy, specialising in clinical postgraduate education for international students. The Academy will be unique in offering opportunities to undertake 6-12 month placements within the UK NHS clinical setting, augmented by a relevant taught curriculum including blended learning utilizing high-quality online materials. The DClín (Med) and DClín (Surg) programmes, together with the existing suite of DClínDent programmes will form a core offering at Level 8 to fulfil elements of the following underpinning aims of the Academy:

- A varied portfolio informed by market research and “global” need
- Exposure to a different health system and culture, gaining insights into medical ethics, regulation, inclusive medicine, the management and finance of healthcare, and the role of government in healthcare
- The opportunity to develop and professionalise students’ experience of medical education as an academic discipline
- An agile portfolio that is responsive to population health needs in the modern era, particularly in the context of increased global warming and conflict
- Flexibility in offering pathways for specialized clinical areas as well as in health infrastructure, e.g. health leadership, medico-legal, etc.
- Flexible learning approaches and levels, including Clinical CPD, Clinical MSc’s, and Professional/Clinical Doctorates
- High quality placements with partner NHS organisations with a clear reciprocal benefit. It is this ‘hand on’ opportunity that will make this programme unique (to the best of our knowledge) and will be the principal reason for its international attractiveness. We have already ensured that this will be an attractive approach to our NHS partners at the level of delivery teams as well as Trust leadership

Programme outline

This programme is provided by the Faculty of Medicine and Dentistry, QMUL and supported by clinical placement activity at Barts Health NHS Trust. The programme is managed by QMICA (the Queen Mary International Clinical Academy) and for organisational reasons the programme itself is situated in the William Harvey Research Institute. The programme management committee therefore reports to the WHRI education committee and in turn to the FMD School Education Committee.

The aims of the programme are to:

- develop qualified doctors' clinical practice and academic knowledge to a FHEQ level 8 according to the framework for higher education qualifications in England, Wales and Northern Ireland (2008)
- meet the national and international need for more physicians and surgeons with high-level and broad clinical, academic and research skills working in both academia and in practice
- offer exposure to comprehensive, contemporary and novel knowledge in medicine / surgery at specialist level
- provide advanced training in healthcare skills such as audit, service evaluation, quality improvement and clinical research as well as clinical or surgical expertise and skills in specialty fields within medicine and surgery
- promote a critical approach to evaluating relevant literature so as to enable evidence-based practice and novel practices in medicine and surgery
- instil the need for continuing professional development and lifelong learning;
- embed the foundations of research.

Learning Outcomes

The learning outcomes reflect the application of scholarly activities to a programme of exposure to and embedding in clinical activities in relevant general and specialist settings in UK practice. Learning outcomes which reflect aspects of professionalism map to 'Good Medical Practice' by the General Medical Council (UK). The learning outcomes also take into account the relevant QAA benchmark statements and The Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008) and are guided by the Queen Mary Statement of Graduate Attributes.

Aims of the Programme

By the end of the programme students are expected to achieve:

Academic Content

- Develop a foundation in the core knowledge and skills required to underpin high level clinical practice in the 21st century
- Understand and critically appraise the literature and the research base for evidence-based clinical care
- Develop a clinical portfolio and write clinical case histories in formats suitable for publication
- Plan and perform clinical audits / service evaluations / quality improvement
- Plan and execute clinical research

Disciplinary Skills

- Develop improved proficiency in clinical and surgical practice in a relevant general or specialist (or subspecialist) setting
- Utilise problem-solving and decision-making skills to assess, diagnose and develop treatment plans and develop skills in multi-disciplinary team-working
- Demonstrate skills in research planning and execution, clinical reflection, audit and quality improvement

Attributes:

- Engage critically with knowledge
- Demonstrate commitment to principles of professionalism as defined by regulatory bodies such as the GMC
- Show respect for others' opinions. Be conscientious and work co-operatively. Respect colleagues, including non- medical professionals.
- Demonstrate an attitude of patient-focussed clinical scholarship

How is the Programme Structured

The structure of the programme should be described in detail. Precise details of the modules can be given in a table. All programme proposals must demonstrate how they will meet the requirements of the Queen Mary Professional Doctorates Framework, and that the elements of independent research provide sufficient opportunity for the candidate to be able to demonstrate the depth of research expected of doctoral level studies.

How you will learn

The programme is divided into three phases, which are described below.

Phase one can be studies on campus but can also be studied off-campus, delivered by e-learning. This phase comprises taught (Level 7) modules. For campus-based students it utilises a blended learning strategy in which some modules are taught face-to-face and others are mainly delivered by blended learning, using e-learning and QMPlus as the predominant sites of delivery. This provides students with a flexible approach to managing aspects of their time and ensuring that they get the most out of all of the materials.

Phase Two is delivered on campus, again utilising blended learning, Workplace based activities provide insight into clinical practice in the UK which in turn provides the substrate for the research modules (Level 8) in this phase. The delivery and support for the research modules will utilise a mixture of face-t-face support and e-learning materials.

Phase Three is delivered on campus but may also be completed off-campus and is focussed entirely on supervised research activity.

Structure in more detail

As outlined, the components of the programme are divided into three phases:

Phase One

- Comprises an initial year (full time) or two years (part time) of level 7 study to provide a basis for subsequent level 8 modules in the programme.
- There are two optional tracks in this initial part of the programme – track 1 comprises 8 x 15 credit level 7 modules selected from the MSc programmes in Global health and track 2 comprises 8 x 15 credit level 7 modules selected from the MSc programme in Healthcare Research Methods. The track selected by the student will depend on their preference for content and delivery (continuous onsite learning vs learning in intensive short blocks)
- Alongside the selected ‘track’ there are two longitudinal 30 credit modules to be studied in parallel – one module covers Professional Studies and is assessed by reflective portfolio and the other is a ‘Research into Practice’ module involving a detailed literature review presented as a ‘mini-dissertation’
- Total number of credits achieved in Phase One – 180 (level 7)
- Where students are studying full time, all modules will be taken in a single year of study
- Where students are studying part time, four 15 credit level 7 modules from the taught programmes plus the 30 credit module ‘Professional Studies’ will be taken in year 1 and four 15 credit modules from the taught programmes plus the 30 credit module ‘Research into practice’ will be taken in year 2.

Phase Two

- Comprises a year (full time) or two years (part time) in clinical placement in Barts Health NHS Trust working alongside clinicians in an area of specialty interest. This clinical activity will, with supervision, provide a basis for participation in academic activity relating to the following new modules:

WHR8901 Applied Research I: <i>(Audit / QI / Service evaluation project)</i> 90 credits Assessment: Dissertation	WHR8902 Applied clinical skills: 60 credits Assessment: Reflective Clinical Portfolio based on clinical experience and to include 4 3000-word clinical case writeups suitable for publication in case reports journals	WHR8903 Research II: <i>(Practical introduction to clinical and basic research including formative assessment of project plan)</i> 30 credits Assessment: Written assignment to include literature review, formal project proposal and project plan
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- Total number of credits achieved in Phase Two – 180 (level 8)
- Where students are studying full time, all modules will be taken in a single year of study
- Where students are studying part time, ‘Applied Research I’ will be taken in year 3 of study and ‘Applied Clinical Skills’ and ‘Research II’ will be taken in year 4.

Phase Three

- Comprises a year (full time) or two years (part time) of level 8 study to execute an independent research project as per the outline from the ‘Research II’ module, followed by completion of a dissertation in which the candidate is required to demonstrate the application of scientific method to a problem of relevance to the subject area.
- Total number of credits achieved in Phase Three 180 (level 3)
- Where students are studying full time, the ‘Research III’ module will be taken in a single year of study
- Where students are studying part time, ‘Research III’ will be taken in years 5 and 6 of study with final assessment at the end of year 6.

The three years of full-time study will provide 540 credits of which 180 credits are level 7 directed study element and the remaining credits are level 8 research directed, using varying types of research. The indicative components are in the following table. Please note that in research degrees, credits are not given for research. Hence, “notional credits” have been allocated to give an indication of time and effort spent by students.

The possible Diets for the programme are outlined / reiterated in specific detail below for clarity:

1) Full time programme, fully campus based

Year of study	Semester One	Semester Two	Semester Three
1 (option 1)	4 x15 credit modules as a group as follows: WHRM912, WHRM909, WHRM903, WHRM935	3 x 15 credit modules as a group as follows WHRM905, WHRM904, WHRM906	1 x 15 credit module as follows WHRM910
	WHR7902 Research into Practice (L7) WHR7901 Professional Studies (L7)		
1 (option 2)	4 x15 credit modules as a group as follows: IPH7001, IPH7000, IPH7017, WOFM983	4 x15 credit modules as a group as follows: IPH7026, IPH7029, IPH7025, IPH7014	

	WHR7902 Research into Practice (L7) WHR7901 Professional Studies (L7)
2	WHR8901 Applied Research (L8) WHR8902 Applied Clinical Skills (L8) WHR8903 Research II (L8)
3	WHR8904 Research III (L8)

2) Part time programme, fully campus based

Year of study	Semester One	Semester Two	Semester Three
1 (option 1)	2 modules as a group as follows: WHRM912, WHRM903	Plus 2 modules as a group as follows WHRM905, WHRM906	
	WHR7901 Professional Studies (L7)		
2 (option 1)	2 modules as a group as follows: WHRM909, WHRM935	Plus 1 module as a group as follows: WHRM904	Plus 1 module as follows: WHRM910
	WHR7902 Research into Practice (L7)		
1 (option 2)	2 modules as a group as follows: IPH7000, WOFM983	Plus 2 modules as a group as follows IPH7026, IPH7029	
	WHR7901 Professional Studies (L7)		
2 (option 2)	2 modules as a group as follows: IPH7001, IPH7017	Plus 2 modules as a group as follows: IPH7025, IPH7014	
	WHR7902 Research into Practice (L7)		
3	WHR8901 Applied Research (L8)		
4	WHR8902 Applied Clinical Skills (L8) WHR8903 Research II (L8)		
5	WHR8904 Research III (L8)		
6	WHR8904 Research III (L8)		

3) Full time programme, with optional phases delivered by distance learning

Year of study	Semester One	Semester Two	Semester Three
1 (all by DL)	4 modules as a group as follows delivered by DL: WHRM989, WHRM996, WHRM992 WHR7300	3 modules as a group as follows delivered by DL: WHRM994, WHRM993, WHRM995	1 module as follows: WHRM997
	WHR7952 Research into Practice (L7) WHR7951 Professional Studies (L7)		
2 (all on campus)	WHR8901 Applied Research (L8) WHR8902 Applied Clinical Skills (L8) WHR8903 Research II (L8)		

3 (either DL or on campus)	WHR8904 Research III (L8)		
4) Part time programme, with optional phases delivered by distance learning			
Year of study	Semester One	Semester Two	Semester Three
Phase One Option One (healthcare research methods track)			
1 (all by DL)	2 modules as a group as follows: WHRM989, WHRM992	2 modules as a group as follows: WHRM994, WHRM995	
	WHR7951 Professional Studies (L7)		
2 (all by DL)	2 modules as a group as follows: WHRM996, WHR7300	1 module as a group as follows: WHRM993	1 module as follows WHRM997
	WHR7952 Research into Practice (L7)		
Phase One Option Two (Global Public Health track)			
1 (all by DL)	2 modules as a group as follows : IPH7121 IPH7124	2 modules as a group as follows : IPH7122 IPH7123	
	WHR7951 Professional Studies (L7)		
2 (all by DL)	2 modules as a group as follows : IPH7127 IPH7128	2 modules as a group as follows : IPH7125 IPH7126	
	WHR7952 Research into Practice (L7)		
Phase One Option Three (Genomics Track)			
1 (all by DL)	2 modules as a group as follows : WHR7301 WHR7305	1 module as a group as follows : WHR7304	1 module as a group as follows : WHR7311
	WHR7951 Professional Studies (L7)		
2 (all by DL)	2 modules as a group as follows : WHR7302 WHR7307	2 modules as a group as follows : WHR7303 WHR7306	
	WHR7952 Research into Practice (L7)		
3 (all on campus)	WHR8901 Applied Research (L8)		
4 (all on campus)	WHR8902 Applied Clinical Skills (L8) WHR8903 Research II (L8)		
5 (either DL or on campus)	WHR8904/WHR8954 Research III (L8)		

6(either DL or on campus)	WHR8904/WHR8954 Research III (L8)
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Modules and Assessment

Please ensure that you identify the core modules that will be necessary for progression on to subsequent years. If students are able to exit the programme with an interim award, please ensure that the core modules needed to be eligible for this award are clearly indicated. Please include any compulsory placements/practice-based modules that need to be undertaken.

Please include the credit value of each module, both taught modules and the research dissertation / research elements.

The programme aims to promote teaching, learning and research enriched by original scholarship to encourage students to become independent learners. Students will accept responsibility for their own learning and will be encouraged to develop powers of critical thought and reflection. Key skills in information technology and oral and written presentations will be enhanced. The course will offer students the opportunity to enhance their knowledge and clinical/surgical skills and become familiar with the issues of study design, data analysis and critical thought. Assessments are outlined below.

In addition to the formal seminar and clinical programme, time is set aside for particular readings and reviews, discussion and problem solving for student research projects, for innovative practical exercises, clinical audit and for feedback and evaluation of the course itself. Time is spent working alongside hospital trainees.

Students will receive a course reading list at the start of teaching and with each module.

The course aims to offer a high teacher/student ratio so that access to advice and ease of communication can be assured. Two staff members will supervise each student research project.

For the elements of blended learning or online provision, these mostly utilise the QMUL virtual learning environment (VLE) QMPlus; QMPlus would be expected to 'host' scaffold elements of the programme and the specific modules, such as an induction module, general information, discussion boards and assessment. Other e-learning platforms may also be used, for example the NHS e-learning app that hosts elements of statutory and mandatory training.

Summative Assessment Methods and Procedure

Assessments are managed by the QMUL examination board and an external examiner (appointed according to QMUL regulations) will moderate achievement within and between different courses. As this is a hybrid programme, assessment procedures will be managed internally both by the teaching and research faculties and externally through the external examiner. The assessments take place over three years of this full time course. For the taught component, the students will be examined at the end of each year according to PGT regulations. For the research element, the students will be examined in a

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year according to PGT regulations. For the research element, the students will be examined in a manner similar to the PGR progression hurdles including presentation of reports completed within the modular structure, and the final Dissertation at the end of the third year, according to the PGR regulations. The assessment structures are in the table below:

Module Code	Module	Credit	Assessment
1-8 elective or	Level 7 modules from Global Health: IPH 7001, IPH7000, IPH7017, WOFM983, IPH7026, IPH7029, IPH7025, IPH7014	8 x 15 credits	As per Global Health programmes specification
1-8 elective	Level 7 modules from Healthcare research methods: WHRM903, WHRM904, WHRM905, WHRM906, WHRM909, WHRM910, WHRM912, WHRM935	8 x 15 credits	As per Healthcare research methods programme specification
9 WHR8904 / WHR8954	Research Into Practice	30	Dissertation 100%
10 WHR8904 / WHR8954	Professional Studies	30	Reflective Portfolio 100%
11 WHR8901	Applied Research I Audit / QI / Service evaluation project and report	90	Written report of project 100%
12 WHR8902	Applied Clinical Skills	60	Reflective Portfolio including 4 clinical case reports 100%
13 WHR8903	Research II	30	Report – Detailed project proposal and plan 100%
14 WHR8904 / WHR8954	Research III	180	Dissertation 80% Plus viva 20%

Grading Criteria for Summative Assessments:

- The grading criteria for the taught components will follow the QMUL regulations. However, as this is a research degree, the final grade will either be a pass or fail.

Appointment of external examiners:

- The appointment of external examiner(s) will follow QMUL procedures. The external examiner will not be the same individual as the external assessor.

Marking and Moderating:

- Students will be required to make clear declarations as to the originality of the work submitted for the in-course assessment and the project dissertation.
- Marking will follow standard QMUL procedures

Feedback to Students:

- Formative assessment exercises with feedback are carried out during the course. Students may choose to carry out clinical work-place based assessments (WBAs) in a similar fashion to our existing specialist trainees. These assessments can be utilised as part of the reflective clinical

portfolio but discussion or extension work based on clinical observation and activities will also provide suitable materials.

Extensions and Deferrals, and Extenuating Circumstances:

- In extreme circumstances, where medical circumstances may have adversely affected examination performance, a medical certificate should be presented to the Course Organiser. Any other extenuating circumstance for extensions and deferrals must be submitted to the Subject Examination Board for consideration according to the QMUL regulations.
- Students with disability will be offered assistance by QMUL Disability And Dyslexia Service.

Supervision: Academic and Clinical:

- The research components will be supervised by QMUL research active academic staff. The taught and clinical components will be supervised by both QMUL and Barts Health NHS Trust clinical specialists and staff including specialty registrars in the department.

Research

Please cover:

- *Description of research components and how this meets the Qualification Descriptors for a research degree*
- *Explain how the elements of independent research provide sufficient opportunity for the candidate to be able to demonstrate the depth of research expected of doctoral level studies.*
- *Supervision of research dissertation / projects*
- *Expectations of the dissertation / research project portfolio (e.g. maximum word limit)*

This professional doctorate programme follows the FHEQ level 8 descriptor which is to:

‘make a significant and original contribution to a specialised field of inquiry, demonstrating a command of methodological issues and engaging in critical dialogue with peers and accepting full accountability for outcomes’.

The research component in this programme differs from that of the traditional hypothesis driven PhD format as it has an application of knowledge to clinical practice. The final dissertation will be composed of the following three parts:

1. Research project report – the candidates are to produce a traditional research thesis to demonstrate they can critical review scientific literature and carry out hypothesis based research. They must produce dissertations that are of publishable standard. The dissertation must not exceed 50,000 words. Two supervisors will be assigned for each student. The project may include development of a new techniques; better understanding of pathophysiology or therapies; developments to improve patient experience; meta- analysis and systematic reviews, and other related projects that fulfil the QAA level 8 criteria.
2. Clinical portfolio report – the candidates are to produce a portfolio report of their activity and which must include of 4 clinical cases covering the breadth and depth of patients to whom they have been exposed. The case reports will be selected and written up in a format that would be publishable in a case reports journal. The final report must not exceed 12,000 words.
3. Service evaluation - the candidates are to produce a service evaluation report (or a clinical audit or quality improvement project) that they have designed and carried out. This report must include aims, methods, results and discussion with proposals for future audit and research in the field. Two cycles of audits should be completed, where possible, to demonstrate closing of the ‘audit loop’. These reports must not exceed 12,000 words.

Entry Requirements

Provide the entry requirement for the proposed programme as agreed at Part one stage and published on the course finder. This should include the level of English Language and any selection criteria for admission?

- In line with the current GMC guidance for sponsorship to work in the UK, MBBS or equivalent degree is required plus meeting specific English language criteria as below.

- IELTS of at least 7 in each testing area and overall 7.5, or to be a national of a country where English is the first and native language & primary medical degree awarded in a country where English is the first and native language.
- For students who have completed their degree in an English speaking country or if it was taught in English, within the preceding five years, or if they have been living and working in an English-speaking country, they may not need an English language qualification, in line with standard QMUL entry criteria.
- In addition, candidates will be required to have 3 years of clinical experience post-qualification, including the most recent 12 months. This latter requirement is to align with the GMC requirements for sponsorship to work in the UK (<https://www.gmc-uk.org/registration-and-licensing/join-the-register/before-you-apply/list-of-approved-sponsoring-bodies>) as applicants will be spending time in our NHS partner organisations as part of the programme.
- Candidates need to be eligible to apply for full GMC registration (with licence to practise to work in unsupervised medical practice and to have completed this registration by the start of the placement year of the programme. PLAB (if required) and subsequent completion of GMC registration provide a progression hurdle into year 2 of the full time (or year 4 of the part time) programme in order to participate in clinical activity fully.

Links with External Partners

N/A

Links to Queen Mary Policies

The programme should be designed and administered with reference to the following documents:

[Academic Regulations](#)

[Code of Practice for Research Degree Students](#)

[Research Development Framework](#) –

[Support for students with disabilities, SpLD and mental health issues](#)

[Student Appeals and Complaints Policy](#)

Person completing programme specification	Professor Maralyn Druce
Person responsible for management of research degree programme	Professor Maralyn Druce
Date programme specification produced / amended by Institute	12/12/2024
Date programme specification approved by Research Degree Programmes and Examinations Board	By Chair's Action 25.3.25

Appendix of Level 7 / Phase 1 Module Titles and Codes

Track One: Health Care Research (William Harvey Research Institute)		
Module Title	Onsite	Distance Learning
Health and the Human Body	WHRM912	WHRM989
Health and Pharmacoeconomics	WHRM909	WHRM996
Clinical Study Design	WHRM903	WHRM992
Professional and Research Skills	WHRM935	WHR7300
Ethics and Regulation in Clinical Research	WHRM905	WHRM994
Practical Aspects of Clinical Research and Early Drug Development	WHRM904	WHRM993
Data management: the interpretation of Statistics and Pharmacokinetics	WHRM906	WHRM995
Pharmaceutical and Healthcare Marketing	WHRM910	WHRM997
Track Two : Global Health (Wolfson Institute of Population Health)		
Module Title	Onsite	Distance Learning
Health Inequalities and Social Determinants of Health	IPH7001	-
Epidemiology and Statistics	IPH7000	-
Health Systems, Policy and Practice	IPH7017	-
Advanced Research Methods	WOFM983	-
Medicines and Pharmaceutical Markets	IPH7026	-
A life-course approach to Sexual and Reproductive Health	IPH7029	-
Health Economic Analyses	IPH7025	-
Health Systems, Theory and Political Economy	IPH7014	-
Health Inequalities and the State of Global Health		IPH7121
Health Systems Policy and Practice		IPH7122
Research Methods, Power and Ethics in Global Health		IPH7123
Understanding Epidemiology and Statistics		IPH7124
Global Health Policy and Governance		IPH7125
Planetary Health		IPH7126
Gender, Sexuality and Health		IPH7127
Crises and Global Health		IPH7128
Track Three : Genomic Medicine (WHRI)		
Module Title	Onsite	Distance Learning
Introduction to Human Genomics		WHR7301
Omics Techniques and their Application to Genomic Medicine		WHR7302
Genomics of Common and Rare Diseases		WHR7303
Molecular Pathology of Cancer and Application in Cancer Diagnosis		WHR7304
Pharmacogenetics and Stratified Healthcare		WHR7305
Bioinformatics, Interpretation, Data Quality assurance in Genome Analysis		WHR7306
Ethical, Legal and Social issues in Genomic Medicine		WHR7307
Applications of Genomics in Infection Diseases		WHR7311