Programme Specification (PG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and title:	MRes Health Data in Practice
Name of interim award(s):	PgCert, PgDip
Duration of study / period of registration:	FT, 1 calendar year
Queen Mary programme code(s):	PMRF-QMIPHS1 PSHDP / A3AF
QAA Benchmark Group:	Mathematics, Statistics and Operational Research and Health Studies
FHEQ Level of Award:	Level 7
Programme accredited by:	
Date Programme Specification approved:	12/01/2023 (via TLC)
Responsible School / Institute:	Wolfson Institute of Population Health

Schools / Institutes which will also be involved in teaching part of the programme:

School of Politics and International Relations

School of Electronic Engineering & Computer Science

Collaborative institution(s) / organisation(s) involved in delivering the programme:

Programme outline

The MRes programme will be of interest to graduates from quantitative disciplines (including but not confined to statistics, computer sciences, mathematics, bioinformatics, biomedical sciences) and qualitative disciplines (including but not confined to anthropology, ethnography, social sciences) who are interested in developing their science within an interdisciplinary and real-world context. The MRes forms the first year of a 1+3 Doctoral training programme funded by the Wellcome Trust; students who obtain a pass or above will continue to undertake doctoral study.

It will provide:
• an introduction to key concepts and research methods and analysis highlighting relevant methodological issues and challenges that comprise the interdisciplinary foundations of the programme and will include an introduction to research design, qualitative and quantitative methods, and societal and ethical issues related to data technologies
• experience of possible research areas for further study including opportunities to apply the knowledge gained and undertake a research project during the MRes year relevant to one of the four scientific themes: Health data in practice; Human-data interaction; effective and efficient evaluation; actionable information.

• opportunity to develop their PhD with input from leading academics from diverse disciplinary backgrounds
• an environment in which students can develop a solid understanding of the wider context of health data and critical thinking in this field

Students will have access to the four themes leads, one of whom will be allocated as a personal tutor. Dissertations will be supervised by leading researchers at the forefront of health data science, in one or more of the four thematic research areas: actionable information; health data in practice; human data interaction; effective and efficient evaluation. Dissertation supervisors are experienced in undertaking health data research and are drawn from across QMUL. The programme is closely aligned with the wider environment at QMUL, including the Digital Environment Research Institute and the Discovery Programme – an innovative near real-time integrated health record for 2.2 million people - and the Barts Life Sciences programme.

Aims of the programme

This MRes programme - as the first year of a four year PhD programme - aims to prepare talented students to develop into future scientific leaders able to apply interdisciplinary perspectives to their research and realise the potential of innovations in health data science for the benefit of patients, the public, health care systems, and society.

In particular this MRes programme aims to:
1. Provide a strong background knowledge in the breadth of disciplines within health data sciences and its critical analysis. Our intake of students will likely come from a range of disciplinary backgrounds, both qualitative and quantitative, and therefore the chosen combination of core and elective taught modules is critical to allow students to gain the appropriate grounding of knowledge whilst exploring and pursuing their own research interests.
2. Encourage and support a positive research culture including encouraging early ownership of their education and research by the students and supporting students to become responsible and pro-active research citizens.
3. Provide an innovative programme of skills development including developing critical analysis, verbal and written communication skills.
4. Provide pre-doctoral training in responsibly conducting research in the health data sciences through a research project module supervised by active QMUL researchers in this area and from within the PhD supervisory pool.

What will you be expected to achieve?

On successful completion of the programme students will:

Academic Content:		
A 1	Develop knowledge and understanding of health data, its structure, provenance, interpretation and uses to solve health care delivery challenges and improve patient and population health outcomes.	
A 2	Develop knowledge and understanding of quantitative methods and qualitative methods and research designs relevant applied to health data science. research	
A 3	Contribute to the advancement of healthcare delivery knowledge, research or practice through the systematic, in-depth exploration of a specific area of practice and/or research.	
A 4	Knowledge of the legal and ethical frameworks and governance structures relevant to health and personal data and evidence about public perceptions of its uses.	
A 5	Critical understanding of the main data driven methods as applied to multimodal health data and their limitations and strengths.	

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A 6	A critical understanding of controlled clinical terminologies used in health data (including SnoMed CT, OPCS and DMDS codes) and their application to develop disease concepts and phenotypes using data from electronic health records.

Disciplinary Skills - able to:	
B 1	Developing analytical skills required to work with health data in order to improve health outcomes
B 2	Critical appraisal skills applied to the use of health data for research and for practice
B 3	Apply multidisciplinary perspectives to research and practice using health data including both quantitative and qualitative methods
B 4	Ability to develop disease concepts and phenotypes using data from electronic health records
B 5	Ability to co-produce research with patients, the public and health professionals

Attributes:	
C 1	Ability to understand and critically appraise research on the use of health data in practice
C 2	Ability to participate confidently in academic and professional debate
C 3	Demonstrate knowledge of methodological approaches appropriate to research on health data science in practice
C 4	Ability to work and study to a high standard and to defined outcomes both independently and as part of a team
C 5	Ability to propose and undertake a research project and to prepare a structured written report of aims, methods, findings and interpretation

How will you learn?

Each topic will be taught using a range of methods, varying according to the subject and learning objectives of the module.

Modules will include some or all of the following: lectures, small group tutorials, and independent study. Most modules will follow a format of structured preparatory work (reading and reflection exercises), interactive lecture, small group seminar, and topic discussions by email.

The four compulsory modules provide the quantitative and qualitative training required for the dissertation.

The modules are taught concurrently with teaching spread within weeks 1-12 each semester.

How will you be assessed?

Different modules will be assessed differently, depending on the learning objectives. Assessment methods will include a traditional examination (short answer questions), tutor-marked assignments (typically, a 3,000-word structured essay), presentations, and a 15,000-word dissertation.

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How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

The MRes is a 1 year full time programme. Students will undertake six taught modules (120 credits in total) and a 60 credit independent project module. In total 180 credits are required to achieve the MRes.

Teaching is spread over two semesters; 60 credits will be taught in Semester one with examinations in January. 60 credits will be taught in Semester two with examinations in May/June.

There are four compulsory modules, which must be taken, and students are then given the option to choose a further three 15 credit modules* (one in Semester 1, two in semester 2) from a list of electives on offer from the School of Electronic Engineering and Computer Science (EECS).

The final dissertation module is core and must be passed to achieve the intended award.

*the following list of electives is indicative. The availability and range of elective modules is dependent upon staffing and/or timetabling and may not be available every year.

Academic Year of Study   FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Dissertation	IPH7110	60	7	Core	1	Semester 3
Health Data in Practice	IPH7111	15	7	Compulsory	1	Semester 1
Qualitative Methods in Health Research	IPH7113	15	7	Compulsory	1	Semester 1
Introduction to Social Science Research 2: quantitative methods and data	POLM083	30	7	Compulsory	1	Semester 2
Effective and efficient evaluation	IPH7112	15	7	Compulsory	1	Semester 1
Design for Human Interaction	ECS712P	15	7	Elective	1	Semester 1
Natural Language Processing	ECS763P	15	7	Elective	1	Semester 1

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Programme Title: Health Data in Practice

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Applied Statistics	ECS764P	15	7	Elective	1	Semester 1
Data Mining	ECS766P	15	7	Elective	1	Semester 1
Machine Learning	ECS708P	15	7	Elective	1	Semester 1
Interactive System Design	ECS733P	15	7	Elective	1	Semester 2
Neural Networks and NLP	ECS7001P	15	7	Elective	1	Semester 2
Risk and Decision-making for Data Science and AI	ECS7005P	15	7	Elective	1	Semester 2

What are the entry requirements?

Entry requirements are dictated by the Wellcome Trust's eligibility criteria for the four-year PhD programme in science: namely a graduate or student who has, or expects to obtain, at least an upper second-class degree (or equivalent for EU and overseas candidates) in a relevant subject area

Relevant subjects include quantitative disciplines (including but not confined to statistics, computer sciences, mathematics, bioinformatics, biomedical sciences) and qualitative disciplines (including but not confined to anthropology, ethnography, social sciences)

Candidates with other relevant qualifications or research experience may also be eligible.

An IELTS score of 7.0 overall, including 6.5 in Writing, Reading, Listening and Speaking (or equivalent in an approved test). Tests must be taken within two years of the programme start date.

How will the quality of the programme be managed and enhanced? How do we listen to and act on your feedback?

The Staff-Student Liaison Committee provides a formal means of communication and discussion between the Institute and its students. The committee consists of student representatives from each year in the Institute together with appropriate representation from staff within the Institute. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Staff-Student Liaison Committees meet regularly throughout the year.

The Institute operates a Learning and Teaching Committee chaired by the Director of Education on all matters relating to the delivery of taught programmes including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in the committee's work in a number of ways, such as through student membership, or consideration of student surveys.

All Institutes operate an Annual Programme Review of their taught provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery. Students' views are considered in this process through analysis of surveys such as NSS and PTES.

What academic support is available?

Students receive academic support via meetings with their academic advisor and via the programme director, module lecturers and attendance at research-related events in both Schools. Students will be allocated one of the co-directors as a personal tutor

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and they will be expected to meet at least every semester. The dissertation supervisors will develop and oversee the research project and will be available throughout to mentor and provide feedback while the research is being conducted and during the writing of the final dissertation.

Programme-specific rules and facts

How inclusive is the programme for all students, including those with disabilities?

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:
• Finding out if you have a specific learning difficulty like dyslexia
• Applying for funding through the Disabled Students' Allowance (DSA)
• Arranging DSA assessments of need
• Special arrangements in examinations
• Accessing loaned equipment (e.g. digital recorders)
• Specialist one-to-one study skills tuition
• Ensuring access to course materials in alternative formats (e.g. Braille)
• Providing educational support workers (e.g. note-takers, readers, library assistants)
• Access to specialist mentoring support for students with mental health issues and Autistic Spectrum Disorders.

Key Academic and Professional Services staff are Mental Health First Aiders.

Links with employers, placement opportunities and transferable skills

The MRes will provide students with generic skills in qualitative and quantitative methods and their application to an in-depth research project which will be applicable to other fields.
Opportunities for work placement opportunities during the PhD will be identified during the preparation of the PhD proposal. A transferable and research skills programme will be developed and delivered as part of the training portfolio during the MRes and PhD. These will be delivered in a time-sensitive manner, i.e. at the relevant time during the programme. This will add value to, and where relevant utilise, the researcher development programme. The Wellcome funds a 9 month transition fund for the immediate post doctoral period which students can apply to in order to enable acquisition of transferable skills, work experience or opportunity to prepare a fellowship application.

Programme Specification Approval

Person completing Programme Specification:

Dr Eleanor Groves

Queen Mary
University of London

Programme Title: Health Data in Practice

Person responsible for management of programme: | Professor Carol Dezateux

Date Programme Specification produced / amended by School / Institute Education Committee: | 12/01/2023 (for Sept 2023)

Date Programme Specification approved by Taught Programmes Board: | 12/01/2023 (via TLC)