

# Genomic Medicine: MSc/PG Dip/PG Cert



The Programme aims to equip you with the knowledge, understanding and skills relating to genomics that will empower you to help lead the holistic integration of genomic technology into patient care within the National Health Service, including via the ambitious Genomics England Ltd (GeL) 100,000 Genomes Project which commences in February 2015.

**NOTE that Health Education England are keen to support some NHS staff to commence their studies for a MSc in Genomic Medicine as early as March 2015.**

The course is especially designed for healthcare professionals from a range of backgrounds. It follows a syllabus specified by Health Education England (HEE) for training NHS staff in Genomic Medicine, and HEE has ring-fenced funding to allow NHS staff to study for the MSc (Genomic Medicine) at accredited provider institutions.

The course is also suitable for other Home/EU or Overseas students who wish to learn about the advances in genomics and bioinformatics particularly as relevant to medical applications, and the challenges of introducing the technology into a healthcare system.

NB The University of Birmingham is one of a number of universities currently bidding to offer this MSc. HEE will decide at the end of January 2015 which universities will be contracted to provide this MSc for NHS staff. If the University of Birmingham's bid is accepted, we will begin accepting applications in early February 2015. In the meantime, you are welcome to contact the Programme Lead Dr Peter Searle with any queries or to register your interest in this course. Email [p.f.searle@bham.ac.uk](mailto:p.f.searle@bham.ac.uk), tel 0121-414-4487

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## Overview

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The course is made up of 7 core modules taken by all students (each worth 15 credits), and provides the choice of either a 60-credit research project or a 30-credit library-based dissertation. These are combined with either 1 or 3 optional modules (also 15 credits each), to make up 180 credits for the MSc. Students who do not wish to undertake the research project/dissertation can register for PG Dip (120 credits) or PG Cert (60 credits), while individual modules can be taken as CPD (CPPD). Flexible registration allows you to accumulate credits through CPD towards one of the qualifications.

## Flexible, work-friendly, blended-learning format

The face-to-face teaching of most modules is concentrated into just 5 days, supplemented by independent study that can be undertaken either on campus or as distance learning. This includes using online content via the Virtual Learning Environment (Canvas), directed reading, self-directed learning, group-work, case studies, preparation of presentations and essays or other assignments. This format is designed to allow even full-time students to remain engaged with their workplace. Including 2 days for Induction and additional days for module assessments, completion of 8 taught modules requires about 45 days at the University of Birmingham campus.

We offer start dates in both March and September each year (COMMENCING 19<sup>TH</sup> MARCH 2015). As a result, most modules are taught twice each year, allowing part-time students the flexibility to choose when they take modules.

## Core modules

1. An Introduction to Human Genetics and Genomics
2. Omics Techniques and their Application to Genomic Medicine
3. Genomics of Common and Rare Inherited Diseases
4. Genomics in Cancer Pathology
5. Pharmacogenomics and Stratified Healthcare
6. Application of Genomics in Infectious Diseases
7. Bioinformatics, Interpretation, Statistics and Data Quality Assurance

## Research project / Dissertation

(8a) The research project gives you the opportunity to explore some aspect of genomics in detail, and can be undertaken either at the University of Birmingham, or (subject to approval) at your place of work. It could be an online bioinformatics project, or based in the laboratory, clinic or community.

(8b) Alternatively if library-based research is more to your liking, you can choose a library-based dissertation, which also allows you to take more optional modules (note, this must include the Professional & Research Skills module).

## Optional modules

9. Ethical, Legal and Social Issues in Applied Genomics
10. Counselling Skills for Genomics
11. Economic Models and Human Genomics
12. Workplace-Based Learning in Genomic Medicine
13. Genomic Medicine Professional and Research Skills
14. Advanced Bioinformatics

## Why study this course?

You will be taught by leading experts from the University of Birmingham and the surrounding NHS Hospitals, including the adjacent Women's Hospital and University Hospitals Birmingham (UHB). As leader of the West Midlands Genomic Medicine Centre (WMGMC, a region-wide consortium of all NHS Trusts), UHB will be a major contributor to the 100,000 Genomes Project. Many clinical staff teaching on the course are directly involved with the WMGMC, either as clinical leads or with key roles in the Molecular Pathology Diagnostic Service or the WM Regional Genetics Service, which are both at the leading edge of introducing technologies for stratified medicine (including genomics) into the NHS. You will have opportunities to visit these NHS facilities

during the course. Sessions involving patient group representatives in several modules help to keep the patient at the focus of the course.

The University of Birmingham enjoys an attractive campus with excellent teaching and learning facilities, which is easy to reach either by road or by rail (we are the only British University with its own railway station on campus, with frequent 8-minute connections to New Street Station in the city centre).

## Duration of study

1 year full-time/ 2 year part-time/ flexible.

## Entry requirements

The course is designed for NHS staff with a broad range of backgrounds. Applicants will be considered based on professional qualifications and experience. We may contact you to discuss your application, and may recommend you take a short "Access Course" we are preparing jointly with our NHS partners, to provide the background necessary for you to benefit from the MSc Programme.

Those not working for the NHS (or other healthcare providers) are also encouraged to apply. For those coming straight from university, we normally require an undergraduate degree in a relevant biological/biomedical/medical subject at 2.1 level (or equivalent). However, professional qualifications and experience will also be taken into consideration.

Overseas candidates must meet the University's English Language requirements eg, IELTS 7.0 (with no less than 6.5 in any band).

## Contact us

For further information please visit our website [www.birmingham.ac.uk/genomicmedicine](http://www.birmingham.ac.uk/genomicmedicine) or contact the Programme Lead, Dr Peter Searle on +44 (0)121 414 4487 or email [p.f.searle@bham.ac.uk](mailto:p.f.searle@bham.ac.uk)



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