

MANCHESTER
1824

The University of Manchester

PGCert Clinical Bioinformatics (Online Learning)

Our 100% online, clinically-focused Clinical Bioinformatics PGCert has been designed in a flexible format, allowing you to balance your existing commitments with studying a Postgraduate qualification. As a student, you'll be studying with international genomics and clinical bioinformatics experts and global leaders in the delivery of our Genomics and Bioinformatics courses with many years of international teaching and research experience. Using clinical case studies, you'll have the opportunity to engage with the online course material and build your network with peers and academics who teach the online course.

This course is a great opportunity for healthcare professionals who may want to pursue their career in clinical laboratories, clinical research, academic research and careers within industry. You will be taught by a team that has successfully delivered the Clinical Bioinformatics Scientist Training Programme and has several years' experience training clinical bioinformaticians for the UK's National Health Service (NHS).

1 intake

May

12

months part-time

6th

Best university
in the UK
(QS World University
Rankings, 2019)

27th

Best university
in the world
(QS World University
Rankings, 2019)



Unique course
This PGCert is the first
fully online course of its
kind worldwide.

YOU STILL STUDY UNITS COVERING THE AREAS OF:

INTRODUCTION TO CLINICAL BIOINFORMATICS AND GENOMICS

Discuss governance and ethical frameworks within the NHS
Describe structure of DNA and reference genome
Biological background to diagnostic genomic testing and clinical genomics
Discuss the role of variants in mendelian and complex disorders
Describe the partnership of clinical bioinformatics and genomics to other clinical specialisms

INTRODUCTION TO HEALTH INFORMATICS

Evaluate the complexities and problems in capturing clinical data
Electronic patient records and different informatics areas and concepts
Importance of coding healthcare delivery consultations
Challenges and benefits of sharing data across the health system

INTRODUCTION TO PROGRAMMING

Develop safe and effective code for use within your organisation
Provide sound introduction to programming and effective software development practice
Explain the relationship between Unix and Linux operating systems
Construct a GIT repository to manage python code
Evaluate software development models including agile and waterfall

INTRODUCTION TO NEXT GENERATION SEQUENCING

Emphasis on ethical and confidentiality issues that arise with sensitive data
Explain scope and application of genetic testing and sequencing technologies
Evaluate gene and disease information in the design of a gene panel
Describe the development, implementation and operation of bioinformatic analysis pipelines
Ethical and governance framework in which clinical NGS is carried out



YOUR COURSE DIRECTOR **Dr. Ang Davies**



"Healthcare needs to overcome a serious shortage of the bioinformatics skills required to analyse, integrate and manage the large data sets generated. Clinical bioinformaticians are responsible for converting the data from such sequencing initiatives into something more meaningful that can be interpreted at a clinical level. They will work closely as part of a multi-disciplinary team that will work to determine the clinical relevance of variation found within the genome."

As a profession, Clinical Bioinformatics is still in its infancy and therefore is largely unknown to many other healthcare professionals and certainly to the wider public. This Clinical Bioinformatics 12-month completely online, part-time course will start to address these issues within the industry."

PROFESSOR OF BIOINFORMATICS **Andy Brass**



"This is a fast-moving and exciting area of science that is making a fundamental difference in medicine. Clinical bioinformaticians are making a real difference in understanding disease processes and improving healthcare. This course provides a starting point for a career in this rapidly expanding area of healthcare."

NEXT STEPS

Please contact us to find out more or arrange a personal consultation with an academic on the course.

 **Tel:** +44 (0)161 306 8333

 **Email:** studyonline@manchester.ac.uk

 **Web:** manchester.ac.uk/clinical-bioinformatics