

# DClinSci: Clinical Bioinformatics Programme Overview

|        |  |   |  |  |   |  |  |
|--------|--|---|--|--|---|--|--|
| Year 1 | <b>Module A1: Professionalism and Professional Development in the Healthcare Environment</b><br>(30 credits) | <b>Module A2: Theoretical Foundations of Leadership</b><br>(20 credits)   | <b>Module B1: Genomics Modules</b><br>1a(i) 1a(v)<br>(20 credits)                      | <b>Shared Module (B2)</b><br>Integration of Specialist Scientific Software In and For Health and Social Care; Coding and Software Engineering; Data Management: Data Science<br>(30 credits) |   |  |  |
| Year 2 | <b>Module A3: Personal and Professional Development to Enhance Performance</b><br>(30 credits)               | <b>Module A4: Leadership and Quality Improvement in the Clinical and Scientific Environment</b><br>(20 credits) | <b>Module A5: Research and Innovation in Health and Social Care</b> (20 credits)       | <b>Module B3: Omics</b><br>(10 credits)  | <b>Shared Module (B4)</b><br>Applied Health Informatics; Translational Research for Clinical Diagnostics and Therapeutics; Debates and Controversies in Clinical Bioinformatics<br>(30 credits) |  |  |
| Year 3 | <b>Module B5</b><br>Infectious and Rare Diseases<br>(20 credits)   | <b>Module B7: Teaching Learning and Assessment</b><br>(20 credits)  | <b>Section C: Research, Development and Innovation</b><br>(270 credits over Years 3-5) |  |   |  |  |
| Year 4 | <b>Module B6</b><br>Optional modules: infection diseases, cancer genomics or rare diseases (20 credits)      | <b>Section C: Research, Development and Innovation</b><br>(270 credits over Years 3-5)                          |  |  |   |  |  |
| Year 5 | <b>Section C: Research, Development and Innovation</b><br>(270 credits over Years 3-5)                       |   |  |  |   |  |  |

# DClinSci: Clinical Bioinformatics

## Module Titles

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Typically, trainees attend 1-2 days face-to-face teaching per 10 credit taught academic module for Sections A and B. This is usually full days (09:00 – 17:00) of face-to-face teaching at The University of Manchester.

### Section A: Leadership and Professional Development (120 credits)

All Clinical Scientists doing HSST will complete these generic units together at the Alliance Manchester Business School, University of Manchester. Those students who are not completing the full professional doctorate could exit, after completing these modules, with a Postgraduate Diploma in Leadership and Management in the Healthcare Sciences.

| Module    | Title   | Year | Semester | Credits |
|-----------|---|------|----------|---------|
| Module A1 | Professionalism and Professional Development in the Healthcare Environment    | 1    | 1        | 30      |
| Module A2 | Theoretical Foundations of Leadership   | 1    | 2        | 20      |
| Module A3 | Personal and Professional Development to Enhance Performance                  | 2    | 1        | 30      |
| Module A4 | Leadership and Quality Improvement in the Clinical and Scientific Environment | 2    | 2        | 20      |
| Module A5 | Research and Innovation in Health and Social Care                             | 2    | 2        | 20      |

### Section B: Specialist Scientific Clinical Programme (150 credits)

These are specialist specific modules relevant to the specialism the student is completing. Some of these modules will be available as stand-alone CPPD units.

#### Clinical Bioinformatics

| Module    | Title  | Year | Semester | Credits |
|-----------|--|------|----------|---------|
| Module B1 | 1a(i) <b>Consolidating the scientific basis of Genomics</b> and 1a(v) Next Generation Sequencing Bioinformatics  | 1    | 1        | 20      |
| Module B2 | Shared Modules: <b>Integration of Specialist Scientific Software</b> In and For Health and Social Care; Coding and Software Engineering; Data Management: Data Science | 1    | 2        | 30      |
| Module B3 | Integrative Omics  | 2    | 1        | 10      |
| Module B4 | Shared Modules: Applied Health Informatics; Translational Research for Clinical Diagnostics and Therapeutics; Debates and Controversies in Clinical Bioinformatics     | 2    | 2        | 30      |
| Module B5 | Infectious Disease: Pathology and Host-Pathogen Interaction AND Clinical Interpretation  | 3    | Both     | 20      |
| Module B6 | Frontiers of Clinical Bioinformatics: Infectious Diseases OR Cancer Genomics OR Rare Diseases  | 4    | 2        | 20      |
| Module B7 | Teaching Learning & Assessment   | 3    | 2        | 20      |

### Section C: Research, Development and Innovation (270 credits)

The research project will be carried out at the student's base hospital with academic supervision by an appropriate expert in the field. The aim of the project is to improve health and health outcomes and may include scientific, clinical, service transformation, innovation, leadership, policy, education or educational research.