Proposed titles: BSc (Hons) Biomedical and Molecular Diagnostics

Proposing School: School of Biological Sciences, College of Sciences and Health

Nature and duration of programme: Modular programme, four academic years full-time

DIT awards sought: BSc (Hons) Biomedical Science, with classifications of First Class Honours; Second Class Honours, Upper Division; Second Class Honours, Lower Division; and Pass
Exit Award: BSc (Ord) Science, without Classification

Recommendations of Panel in relation to award sought:

The Panel commends the School on the creation of this ground-breaking innovative programme in Molecular Diagnostics, with a CAGR of 9.3% this market is estimated to be worth 9.3 billion dollars by 2020 and is the fastest growing area of the in vitro diagnostics (IVD) industry sector at present.

The introduction of this programme is timely. The panel was impressed with the standard of documents produced. The panel is pleased to recommend to Academic Council the approval of the award of Bachelor of Science (Honours) in Biomedical and Molecular Diagnostics at Level 8 of the National Framework of Qualifications with an exit award of Bachelor of Science in Science at Level 7 of the National Framework of Qualifications with the following conditions and recommendations.

School response:

The School of Biological Sciences would like to thank the panel for their positive comments regarding the development of this programme, highlighted by the Panel as ‘ground-breaking and innovative’. The School acknowledges and thanks the Panel for their careful consideration of the documentation and for their time and effort in reviewing the documentation, participating in the panel and providing detailed feedback and recommendations. The response of the School to the Conditions and Recommendations of the panel are detailed below:

### CONDITIONS

<table>
<thead>
<tr>
<th>Panel comment</th>
<th>School Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whilst Quality, Regulatory and Statutory Environment in Molecular Diagnostics are currently introduced in the Professional Skills module, its importance to the industry sector requires the creation of a separate module in either 3rd or 4th year.</td>
<td>The School has replaced the ‘Drug Development’ module in year 4 of the programme with a new module entitled ‘Quality, Regulatory and Statutory Environment in Molecular Diagnostics’. The module descriptor for this module is attached. This condition is also relevant for recommendation 5.</td>
</tr>
<tr>
<td>2. Introduce professional concepts within the</td>
<td>The Professional Skills module in stage 2 has</td>
</tr>
</tbody>
</table>


existing module professional skills and rename the module ‘Professional Skills for Biomedical and Molecular Diagnostics.’ ‘What is Molecular Diagnostics’ should be covered in this module. An introduction to innovation, disruptive technologies, technology transfer and translation can be introduced as part of this module.

been renamed ‘Professional Skills for Biomedical and Molecular Diagnostics’ and includes content such as ‘What is Molecular Diagnostics’, an introduction to innovation, disruptive technologies, technology transfer and translation. The revised module descriptor is attached.

| 3. The project grading should align with the learning outcomes for the module and provide more detailed breakdown on the assessment. It is recognised that there are three components to the 4th year project (laboratory work, write up of the project / thesis and effective oral communication of the project) each of which need to be assessed. |
| The project grading is now more closely aligned with the learning outcomes. The project handbook details the specifics of how each of the three components are assessed. Practical laboratory work and write up of the project (i.e. thesis) are assessed via reference to the project thesis and consultation with the project supervisor. Oral communication of the project is assessed via a poster presentation at the annual School Research Day. A revised module descriptor is attached (BIOL4XXX). |

**Recommendations**

<table>
<thead>
<tr>
<th>Panel comment</th>
<th>School response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Make more explicit where diagnostic ethics, research preparation, critical thinking, research skills, case studies are included on the programme</td>
<td>The programme learning outcomes and teaching, learning and assessment strategies have been mapped to all modules (ref Programme Handbook Table 5) which identifies where these materials are present in the programme. The following are highlighted in reference to the panel’s queries: <strong>Diagnostic ethics</strong>&lt;br&gt;KHS 3 Debate contemporary ethical, moral and legal issues relevant to molecular diagnostics&lt;br&gt;<strong>Research preparation</strong>&lt;br&gt;KHS 1 Formulate a strategy to collect information and evidence from diverse sources in relation to molecular diagnostics&lt;br&gt;C1 Retrieve and manage information and evidence using computer based strategies and tools&lt;br&gt;C2 Present appropriately cited information and evidence in written and oral formats&lt;br&gt;<strong>Critical thinking</strong>&lt;br&gt;KHS 2 Evaluate and draw evidence based conclusions from collected data&lt;br&gt;KHS6 Devise molecular solutions to biological challenges</td>
</tr>
<tr>
<td>2.</td>
<td>Review the assessment and teaching methods of module descriptors for the programme to ensure applicability to this programme, that they are written broadly to adapt to changes in industry whilst providing sufficient details of what is covered.</td>
</tr>
<tr>
<td>3.</td>
<td>Consider the introduction of awards and prizes for high performing students in all years of the programme to incentivise students.</td>
</tr>
</tbody>
</table>
| 4. | Reconsider how student under performance in the work placement is managed, so that it is clear to a student that if they have to be withdrawn from a placement due to their underperformance, that it may not be possible to organise a different placement until the following year. | There are two scenarios for a student being withdrawn from placement:  
   a) Unsatisfactory student performance (despite discussion/intervention by placement and academic supervisor): a student will be withdrawn from placement, deemed to have failed the module and a repeat placement will be provided at the next available opportunity.  
   b) Issues outside of the control of the student: An alternative placement will be arranged by the School in the same academic year.  
   The Professional Placement handbook wording |
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.</strong> The drug development module could be removed from the programme and replaced with the suggested Quality Module (see condition above).</td>
<td>The Drug Development module has been removed and replaced with the Quality, Regulatory and Statutory Environment in Molecular Diagnostics as per Condition 1 above.</td>
</tr>
<tr>
<td><strong>6.</strong> Consider the progression pathways available for these students (industry and continued postgraduate studies) and the provision of postgraduate opportunities. (For example Drug Development could be a potential stream within a postgraduate taught programme).</td>
<td>The provision of postgraduate opportunities for these students via a new DIT postgraduate programme will be considered subject to market demand and available resources.</td>
</tr>
<tr>
<td><strong>7.</strong> Reconsider if the students’ third year marks should contribute to the overall final award classification of the programme.</td>
<td>The Programme Team discussed this point and has agreed that 20% of the overall mark achieved in stage 3 would contribute to the overall final award classification in stage 4. The programme information document and stage 3 and 4 student handbooks have been modified to reflect this change. Students will be also be informed of this by the Year tutor at the commencement of their academic year in stage 3.</td>
</tr>
<tr>
<td><strong>8.</strong> Include in the programme document, the inclusion of student representatives on the programme committee.</td>
<td>As with all programmes in the School, one student representative for each year of the programme will be a member of the programme committee and the programme document has been amended accordingly.</td>
</tr>
<tr>
<td><strong>9.</strong> Make it clearer in the student handbook and programme document that the teaching for the modules Bioinformatics and Data Analytics, Biosensor Development and Bioproduct Development is within the first semester of the year and that student self-directed learning will be facilitated on-line in semester 2 to enable students the option of undertaking a work placement abroad.</td>
<td>The module descriptors have been modified in the delivery duration section as follows to reflect this recommendation “One academic year. The contact hours for this module will be delivered within the first semester of the year and student self-directed learning will be facilitated on-line in semester 2 to facilitate work placements”.</td>
</tr>
<tr>
<td><strong>10.</strong> Investigate the possibility of furthering the variety of pedagogical methodologies across the programme.</td>
<td>A variety of teaching approaches are currently used as outlined in the programme document (page 19) and the opportunity to include other pedagogical and andragogical methods for teaching, learning and assessment will be</td>
</tr>
<tr>
<td>explored.</td>
<td></td>
</tr>
</tbody>
</table>
Module Title: Quality, Regulatory and Statutory Environment in Molecular Diagnostics

School Responsible: School of Biological Sciences

Module Overview:
The module will provide an overview of the current best practices in the areas of quality, regulatory and statutory environment with a specific focus on the field of Molecular Diagnostics.

Learning Outcomes (LO):
On completion of this module, the learner will be able to:
1. Explain the role of QC/QA/QI in managing and establishing quality in the molecular laboratory.
2. Describe in detail the different phases of total laboratory testing and assess their importance.
3. Explain the process involved in CAP accreditation.
4. Compare and contrast the regulatory approval pathways for molecular diagnostics in different markets.

Indicative Syllabus:
Quality
Establishing quality in the molecular laboratory • QC, QA, QI – Total Quality Management • Practicing continuous QC/QA • Assay improvement/optimization (new methods, technology, etc.) • CAP recommendations/requirements.

Regulatory & Statutory
Focus on the development paths of LDT, CE and FDA IVD products → U.S. requirements and processes diagnostics development • U.S. government oversight of diagnostics, diagnostic clearance and approval pathways • Navigating the development process • Global diagnostics regulation in key markets such as EU, Japan, China and other complex emerging markets → e.g. the 510(k) regulatory path, premarket approval (PMA) path, Clinical Laboratory Improvement Amendments (CLIA). .

Learning and Teaching Methods:
The course will be delivered by lectures including possible guest lectures (16), web-based materials, case studies involving class discussion and participation (18) and a site visit (6). A total of 60 hours self-directed learning is required and tutorial/review sessions will also be provided.

Module Delivery Duration:
Module will be delivered over one semester.

Assessment

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weighting (%)</th>
<th>LO Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unseen written examination</td>
<td>60%</td>
<td>1-3</td>
</tr>
<tr>
<td>Written assignment</td>
<td>40%</td>
<td>4</td>
</tr>
</tbody>
</table>

Module Specific Assessment Arrangements (if applicable)
(a) Derogations from General Assessment Regulations
(b) Module Assessment Thresholds
Pass mark 50%: Threshold 43%
### Essential Reading: (author, date, title, publisher)


### Supplemental Reading: (author, date, title, publisher)


### Web references, journals and other:


### Version No: 1  Amended By AK

<table>
<thead>
<tr>
<th>Commencement Date</th>
<th>Associated Programme Codes</th>
<th>DT206</th>
</tr>
</thead>
</table>

# Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned

*Details of the assessment schedule should be contained in the student handbook for the programme stage.

**Date of Academic Council approval** ........................................
M1: Module Descriptor Template

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Pre-requisite Module code(s)</th>
<th>Co-Requsite Modules code(s)</th>
<th>ISCED Code</th>
<th>Subject Code</th>
<th>ECTS Credits</th>
<th>NFQ Level (CPD)#</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL2XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 ECTS</td>
<td></td>
</tr>
</tbody>
</table>

**Module Title**: Professional Skills for Biomedical and Molecular Diagnostics

**School Responsible**: School of Biological Sciences (Dr. Andrew Knox & Dr. Gwilym Williams)

**Module Overview:**

The module will support the student’s core scientific training in providing an up-to-date introduction to bioethics and the fundamental principles involved in molecular diagnostic development. In parallel with knowledge acquisition, students will be provided with a platform to develop critical analysis skills in order to dissect these topics through individual and group work exercises.

The aim of the bioethics component is to provide an introduction to bioethical theory and analysis, covering a range of topics that are relevant to the work of the modern life scientist. The second segment of this module discusses the key considerations and skills required to create and develop diagnostics in a professional setting.

**Learning Outcomes (LO):**

On completion of this module, the learner will be able to:

1. Explain the meaning and role of bioethics in the modern life sciences and medicine
2. Critically evaluate the major different theories underpinning ethical thinking and analysis, as they relate specifically to life sciences
3. Identify life science issues that represent potential ethical dilemmas for current and future society
4. Demonstrate the ability to formulate an ethical analysis of a current bioscience topic
5. Understand what is a disruptive innovation and be able contextualise this in the field of diagnostics.
6. Understand the technology transfer and translation process.
7. Identify the key components of experimental design and statistical methods in a research environment.
8. Understand the basics behind Intellectual Property protection.
9. Demonstrate technical writing skills
10. Understand the role of regulatory affairs in the context of diagnostic development.
11. Demonstrate understanding of the concept of prevention or control of hazards.

**Indicative Syllabus:**

**Component 1:**

**Bioethics**: A definition of ethics, morality and bioethics. The major schools of ethical thinking: consequentialism and deontology. Virtue ethics, cultural relativism and humanist approaches. Deriving a framework for establishing the validity of an ethical conclusion.


Ethical issues raised by agricultural biotechnology: genetically modified crops in the developed and developing worlds. The application of modern genetics to farm animals.

Somatic and germ line gene therapy. The patenting of genes (e.g., BRCA1) and living organisms (e.g., Harvard oncomouse). The ethical questions pertaining to reproductive biology and stem cell cloning.

Component 2:

The second segment of this module is divided into the following sections which introduces molecule diagnostics and discusses the key considerations and skills required to create and develop diagnostics in industry and academia.

1) Innovation & Disruptive Technologies with a focus on Molecular Diagnostics. 
The content delivered in this section will address the current state-of-the-art in molecular diagnostics with a focus on the process of innovation and disruption.

2) Technology Transfer & Translation Process. 
The aim of this component is to introduce students to the process of technology transfer and translation with a focus on diagnostics.

3) Research Methods and Technical writing. 
This section will provide students with a background to experimental design, statistical methods and technical writing.

4) Intellectual Property. 
Students will be exposed to the field of Intellectual property and the role it plays in successful commercialisation on diagnostic development.

5) Regulatory framework for diagnostic development and registration. 
This section of the module will introduce students to the complex world of regulatory affairs in the field of diagnostics.

6) Health and Safety in the workplace. 
The aim of the health and safety component is to acquaint the student with the requirement for legislation, control procedures and risk assessment in relation to the use of chemical, biological and physical hazards in the work place.

Learning and Teaching Methods:
Component 1: Lectures, discussion groups and self-directed learning.
Component 2: Lectures, case-studies, discussion groups and self-directed learning

<table>
<thead>
<tr>
<th>Total Teaching Contact Hours</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Self-Directed Learning Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

Module Delivery Duration:
Module will be delivered over one semester.

Assessment
Assessment Type: 100% continuous assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weighting (%)</th>
<th>LO Assessment (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1: Two written assessments</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Component 2:</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Two group case study assessments (Innovation and Intellectual Property)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One written assessment (Either Technical writing or Health and Safety related)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Module Specific Assessment Arrangements (if applicable)

(d) Derogations from General Assessment Regulations
   DT206 50% pass mark 43% threshold

(e) Module Assessment Thresholds
   DT259 35% threshold: overall final mark between components should compute to 40%

(f) Special Repeat Assessment Arrangements

Essential Reading: (author, date, title, publisher)

Component 1:

Component 2:

Text Book –
- Molecular Diagnostics: Current Research and Applications
  by Jim Huggett (Editor), Justin O’Grady (Editor)
  by England (Author), Wessing (Author)

Supplemental Reading: (author, date, title, publisher)

Web references, journals and other:
Component 1: Bioethics
Journals: Ethics in Science and Environmental Politics; Biopolicy Journal; Eubios Journal of Asian and International Bioethics; Nature Biotechnology.
Websites: the web home pages of the following organizations have extensive information on bioethics:
The Nuffield Council for Bioethics; The Human Genetics Commission (UK); The Agricultural and Biotechnology Commission (UK); The Human Fertilization and Embryology Authority (UK); The Wellcome Foundation (UK); The European Group on Ethics in Science and the New Technologies (The European Commission, Brussels); EuropaBio; The International Association of Bioethics (The Netherlands); The International Bioethics Committee (UNESCO); The American Bioethics Advisory Commission (USA); The BIO Organization (USA); University of Montreal HUMGEN site.

Component 2:
Websites:
https://www.collaboris.com/blogs/collaboris-blog/standard-operating-procedures/2015/09/01/standard-operating-procedures---a-complete-guide
https://www.youtube.com/watch?v=_JN5Y1dW4AA

Version No: Amended By
Commencement Date Associated Programme Codes

# Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned
*Details of the assessment schedule should be contained in the student handbook for the programme stage.

Date of Academic Council approval ………………………….
**M1: Module Descriptor Template**

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Pre-requisite Module codes</th>
<th>Co-Requisite Modules code(s)</th>
<th>ISCED Code</th>
<th>Subject Code</th>
<th>ECTS Credits</th>
<th>NFQ Level (CPD)#</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL4XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 ECTS</td>
<td>8</td>
</tr>
</tbody>
</table>

**Module Title:** Research Project

**School Responsible:** Biological Sciences

**Module Overview:**
The aim of this module is to provide students with direct experience of supervised research in Biomedical Science and *in-vitro* diagnostics. The research project will involve a significant laboratory-based research study in areas such as cytogenetics, biosensors and molecular and point of care- diagnostics. The project module aims to equip students with important research skills, including project management, problem solving and data analysis and allows further development of critical evaluation and scientific communication.

**Learning Outcomes (LO):** (to be numbered)

For a 5ECTS module a range of 4-10 LOs is recommended

<table>
<thead>
<tr>
<th>On Completion of this module, the learner will be able to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Conduct a thorough search and written review of the relevant literature.</td>
</tr>
<tr>
<td>2 Demonstrate a comprehensive grasp of the subject area of their project.</td>
</tr>
<tr>
<td>3 Work under academic supervision and also independently where appropriate, to a defined schedule.</td>
</tr>
<tr>
<td>4 Perform the techniques required for laboratory work, data collection and analysis</td>
</tr>
<tr>
<td>5 Write a project dissertation and prepare a poster presentation according to guidelines provided.</td>
</tr>
<tr>
<td>6 Critically assess the implications of their project research, including therapeutic, ethical and potential for commercialisation etc.</td>
</tr>
<tr>
<td>7 Communicate the key findings to their supervisors and peers.</td>
</tr>
</tbody>
</table>

**Indicative Syllabus:**

Introduction to laboratory and safety guidelines

Discuss project design, project plan and ethical considerations with supervisor(s)

Perform literature review

Conduct laboratory investigation

Submit progress reports as directed

Generate, analyse and interpret results

Complete and submit project thesis

Prepare scientific poster for oral presentation

**Learning and Teaching Methods:**

This a research project and the module will be completed via authentic research activity, either in the field (Industry, Research Institute or abroad in an Erasmus partner Institute) external to DIT, or internally in DIT.

<table>
<thead>
<tr>
<th>Total Teaching Contact Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Self-Directed Learning Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>518</td>
</tr>
</tbody>
</table>

**Module Delivery Duration:**

This module will be delivered over one semester (12 weeks project)

**Assessment**

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weighting (%)</th>
<th>LO Assessment (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Thesis incorporating Laboratory work, Literature Review, Critical Evaluation</td>
<td>90</td>
<td>1-7</td>
</tr>
<tr>
<td>Poster Presentation</td>
<td>10</td>
<td>6,7</td>
</tr>
</tbody>
</table>

**Module Specific Assessment Arrangements (if applicable)**

(g) Derogations from General Assessment Regulations

50% pass mark

(h) Module Assessment Thresholds

No threshold applies
### Essential Reading:
(author, date, title, publisher)
Please see module webcourses and project guidelines, DIT. Specific reading requirements will be project specific.

### Supplemental Reading:
(author, date, title, publisher)

<table>
<thead>
<tr>
<th>Version No:</th>
<th>2</th>
<th>Amended By</th>
<th>N Gilmartin, C Herra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commencement Date</td>
<td>Sept 2016</td>
<td>Associated Programme Codes</td>
<td>DT206</td>
</tr>
</tbody>
</table>

# Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned

*Details of the assessment schedule should be contained in the student handbook for the programme stage.*

**Date of Academic Council approval** .................................
Module Title: Research Methods and Data analysis

School Responsible: School of Biological Sciences

Module Overview:
This module deals with data presentation, the statistical analyses and interpretation of biological data to enable an informed and comprehensive evaluation of scientific data/evidence. It is comprised of several components: Selection of appropriate study design, Study design issues, Data presentation, Statistical data analysis and interpretation and preparation for research project. The data analytical approaches will all be undertaken using either Excel or the statistical software SPSS.

The aim of this module is to:
Give students an understanding and familiarity with research data. To understand the influences on how data is presented, analysed and interpreted. Also, the aim of this module is to develop an understanding of the role of epidemiology in research, clinical trials and disease monitoring in terms of appropriate study design and strength of evidence from research, as well as an ability to critique and evaluate research findings.

Learning Outcomes (LO):
On completion of this module, the learner will be able to:
1. Be able to set up a database de novo or from importing from other software.
2. Demonstrate familiarity with various statistical approaches to the analyses of biological data.
3. Be able to distinguish the various types of data and data distributions and the importance of this to its analyses - both descriptive and inferential.
4. Be able to critically evaluate results in terms of their validity and reliability.
5. Be able to interpret and discuss research results following statistical analyses distinguishing statistical from clinical significance.
6. Be able to communicate results by way of oral communication or a poster.
7. Demonstrate the ability to use Excel or SPSS in analyzing a data set.

Module content:
Preparation for research project – Use of reference manager and referencing software
Study design issues, the protocol – sample size and type. Power. Data classification – categorical and continuous.
Distributions – normality. Descriptive statistics – numerical (summary) and graphical.
Inferential statistics – univariate and multivariate. Parametric and nonparametric statistical tests.
Statistical significance – p values and confidence intervals.
Data display as tables and graphs and when to use them.
Presenting research output in posters.
Examining the validity and reliability of data and interpretation of results in terms of chance, bias and confounding.
Excel and SPSS – using these software packages to analyze data.

Learning and Teaching Methods:
Lectures, tutorials, student presentations/dissertations (10 hours)
Self-directed learning.
Practical based learning in laboratory using Excel and SPSS to analyze data (building on the introductory material on SPSS in first year) (9 hours)

Module Delivery Duration:
Lectures 10 hours, lab practicals 8 hours, Self-directed learning 84 hours. To be delivered in semester 2 in a 2-week block at the beginning of term.

Assessment

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weighting (%)</th>
<th>LO Assessed (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>100</td>
<td>1,2,3,4,5,6,7</td>
</tr>
</tbody>
</table>
Students must obtain an overall pass mark of 50% in the continuous assessment.

**Module Specific Assessment Arrangements (if applicable)**

(a) Derogations from General Assessment Regulations

(b) Module Assessment Thresholds

(c) Special Repeat Assessment Arrangements

<table>
<thead>
<tr>
<th>DT206 &amp; DT204 50% passmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>43% threshold</td>
</tr>
</tbody>
</table>

**Essential Reading:**
- Daly and Bourke. 2000. Interpretation and Uses of Medical Statistics. Blackwell Science
- Salkind NJ, 2015. 100 Questions (and Answers) about Statistics. Sage

**Web references:**
- [http://www.bmj.com/statsbk/](http://www.bmj.com/statsbk/)

# Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned

*Details of the assessment schedule should be contained in the student handbook for the programme stage.

**Date of Academic Council Approval** ..............................................................