Section 2 - Module Specification

Module Title | Molecular basis of personalised medicine | Module Code | BMD383

Credit Value | 15 | Level | 6 | Mode of Delivery | On Campus | Semester | Semester B

Pre-requisite modules	Co-requisite modules	Overlapping modules
SBC101	SBS703, SBC602	none

1) Content Description
Provide a description of the module, as it will appear in the Module Directory and on the Student Information System (approx. 70-80 words).

This module will build on basic information on the pathological processes and cancer biology provided in other modules to provide an in-depth analysis of the tools available to analyse heterogeneity in disease (gene expression arrays, SNP analysis, next generation sequencing), and how these can be used to stratify disease and then exploited to develop individualised treatment. It will examine strategies being developed to refine treatment programmes and also investigate how such analyses can be used to predict risk and so develop preventive strategies. It will be lecture based, delivered by experts in the field, and supplemented with seminar sessions describing approaches to analysing data and interrogating the literature.

2) Module Aims
Specify the aims of the module, i.e. the broad educational purposes for offering this module.

To provide an understanding of the methods of analysing disease heterogeneity, risk of disease, and response to treatment.

To demonstrate how these methods have led to stratification of disease and how this impacts on treatment strategies.

To introduce the concept of risk prediction within a population and how this may be exploited to develop preventive strategies.

To provide experience in critical evaluation of existing data and literature.

3) Learning Outcomes

Identify the learning outcomes for this module, i.e. knowledge, skills and attributes to be developed through completion of this module. Outcomes should be referenced to the relevant QAA benchmark statements and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008). The SEEC Credit Level Descriptors for Further and Higher Education 2003 and Queen Mary Statement of Graduate Attributes should also be used as a guiding framework for curriculum design.

Academic Content:	
A 1	To describe tools and methods available to dissect disease heterogeneity.
A 2	To describe how these analyses can be used to stratify disease and impact on treatment and preventive strategies.
A 3	To think critically about publicly available data and current literature.

Disciplinary Skills - able to:	
B 1	Mine public data sets
B 2	Evaluate the impact of disease stratification on treatment opportunities
B 3	Evaluate the contribution of emerging data on refinement of treatment and prevention
B 4	Appreciate the rapidly emerging knowledge of disease heterogeneity and how this may change diagnosis and treatment

Attributes:	
C 1	To access and interrogate existing data

4) Reading List

Provide an indicative reading list for the module. This should include key texts and/or journals but should not be an exhaustive list of materials.

Bioinformatics: A practical guide to the analysis of genes and proteins. A D Baxevanis and BFF Ouellette. 2008. John Wiley and Sons
Genomic and Personalised Medicine. HW Willard and GS Ginsburg (eds). Academic Press 2009. ISBN 0-12-369420-5
Hallmarks of Cancer: The Next Generation. D Hanahan and RA Weinberg. Cell 2011;144: 646-674.

Teaching and Learning Profile

Provide details of the method of delivery (lectures, seminars, fieldwork, lab work, etc.) used to enable the achievement of learning outcomes and an indicative number of hours for each activity to give an overall picture of the workload a student taking the module would be expected to   undertake.

1. Student / lecturer interaction Specify details of the method of delivery e.g. lectures, seminars, fieldwork, lab work etc. used to enable the achievement of the learning outcomes and an indicative number of hours for each activity.	22 h of lectures
2. Student independent learning time Specify an indicative number of independent hours of study a student undertaking this module would be expected to undertake.	To include directed reading of recent journal articles (related to research topics and research methods discussed in lectures) 128h
1. + 2. Total module notional study hours Specify the total module notional study hours. This should be a total of the hours given in 1. and 2. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.	150 h

Assessment Profile

Provide details of the assessment methods used to assess the achievement of learning   outcomes.

Brief Description of Assessment	Assessment Type	Duration / Length of Examination / Coursework	Percentage Weighting	Final element of assessment?	Qualifying Mark for Individual Assessment
Examination	Examination	3 h	80%	Yes	
Coursework	Coursework		20%		

Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or synoptic reassessment.

◯ Standard Reassessment   ⦿ Synoptic Reassessment

Synoptic reassessment details (if you have indicated synoptic reassessment above, please give details)		
Brief Description of Assessment	Assessment Type	Duration / Length of Examination / Coursework
Resit Examination	Examination	3 h

Section 3 - Alternative Assessment Arrangements for Associate Students

This section must only be completed if the module will be made available to associate students in Semester A and where the credit value of the "associate" version is the same as for the main version, and the main version is assessed by exam in May which is not available to the associate students. All other aspects of the module specification remain the same as indicated in Section 2 above. To add alternative assessment arrangements please click 'Add Alternative Assessment'.

Section 4a - Half Module for Associate Students (for a half module to be taught in Semester   A)

This section must be completed if the proposed module will take place over 2 semesters but will be made available to single-semester associate students in a half-credit format in Semester A. Modules worth less than 30 credits taken over 2 semesters may not be made available in a half-credit format. To add details for the half module please click 'Add Half Module (Semester   A)'.

Section 4b - Half Module for Associate Students (for a half module to be taught in Semester   B)

This section must be completed if the proposed module will take place over 2 semesters but will be made available to single-semester associate students in a half-credit format in Semester B. Modules worth less than 30 credits taken over 2 semesters may not be made available in a half-credit format. To add details for the half module please click 'Add Half Module (Semester   B)'.