

Module Specification

Module Title	Ecological and Evolutionary Genomics			Module Code	SBC322	
Credit Value	15	Level	6	Mode of Delivery	On Campus	Semester A

Pre-requisite modules	Co-requisite modules	Overlapping modules
BIO221 Evolutionary Genetics	BIO223 Genes and Bioinformatics	

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).

Research in ecology and evolution has addressed many important issues as empirical and theoretical levels. However, relatively little is known about the genomic basis underlying phenotypic change. This module will highlight recent developments in ecological and evolutionary genomics, including major research questions and approaches used to address them. Coursework will include formal lectures, extensive critical reading of primary literature (peer-reviewed publications) and extensive in-class contributions by students.

2) Module Aims

Specify the aims of the module, i.e. the broad educational purposes for offering this module.

The aim of this module is to understand and critically evaluate research questions, applications, methods and experimental designs in ecological and evolutionary genomics.

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	Understand the major questions underlying research & applications in ecological & evolutionary genomics
	Understand the major methods being used in these disciplines.

A 2	
A 3	Understand the major challenges of addressing major questions and applying major methods in these disciplines.
A 4	Understand the importance of appropriate experimental design.

Disciplinary skills - able to:	
B 1	Be able to understand the role of genomics approaches in modern biology.
B 2	Be able to interpret genomics research in ecology & evolution.
B 3	Be able to propose and critically assess experimental designs.

Attributes:	
C 1	Engage critically with knowledge – acquire and apply it appropriately.
C 2	Connect information from different areas to apply to problems.
C 3	Assess changing ideas in science with improved methods and ideas.
C 4	Produce scientifically rigorous analyses to be presented in an appropriate manner.
C 5	Work individually and in groups

4)ReadingList

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.

Ellegren, H. (2014). Genome sequencing and population genomics in non-model organisms. Trends in ecology & evolution, 29(1), 51-63.
 Stapley, J. et al. (2010). Adaptation genomics: the next generation. Trends in ecology & evolution, 25(12), 705-712.
 Allendorf, F. W., Hohenlohe, P. A., & Luikart, G. (2010). Genomics and the future of conservation genetics. Nature Reviews Genetics, 11(10), 697-709.

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. This information will form the Key Information Set for each undergraduate programme and will be used to populate the KIS widget found on the QMUL programme information pages. More information can be found [online](#) about KIS. You may also wish to refer to the [QAA guidance on contact hours](#) when completing this section.

Activity Type	KIS Category	Time Spent (in hours)
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Scheduled learning and teaching	30	20
Placement		
Independent Study	120	80
Total	150	100
Lecture	Scheduled	22
Practical Classes and workshops	Scheduled	8
	Total	30

Specify the total module notional study hours. This should be a total of the hours given for each activity. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.

Activity Type	Total Time Spent (in hours)	Percentage of Time Spent
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Use the information provided in the box above to specify the total time spent and the percentage time spent in each category of teaching and learning activity.

Assessment Profile

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

Brief Description of Assessment	Assessment Type	KIS Category	Duration / Length	% Weighting	Final element of assessment?	Qualifying Mark
Exam	Written Exam	Written	3 hours	80	Yes	
In-class	Oral and written assessment & presentation. And class participation.	Practical	1 to 3 times 5-10 minutes oral; 1 time written. Class participation throughout the semester	20		

Qualifying mark: A specified minimum mark that must be obtained in one or more elements of assessment in order to pass a module. **This is in addition to, and distinct from, the requirement to achieve a pass in the module mark to pass the module.**

Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or 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 Exam	Written Exam	3 hours

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'.

Description of Assessment	Assessment Type	KIS Category	Duration / Length	% Weighting	Final element of assessment?	Qualifying Mark
Written exam	Written Exam	Written	3 hours	80	Yes	

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)'.