***Note:*** *This sheet does not form part of the specification and will not be published. The information on this sheet provides contextual and supporting information for the approval process and should provide answers to questions that commonly arise in the consideration of new and revised modules. Please type directly into the form, boxes will expand as needed.*

***NB: specifications with errors in formatting, typos and/or incorrect or incomplete templates will not be considered for approval until corrected.***

***For new modules complete Section A and for revised modules complete Section B. Complete Section C for any new/revised modules.***

***Section A – for new modules only***

| **Question** | **Answer** |
| --- | --- |
| 1. Title of module
 |  |
| 1. State which stage this module will be applicable to (information required by KentVision)
 |  |

***Section B – for revised modules only***

| **Question** | **Answer** |
| --- | --- |
| 1. Module Code
 | **BIOS6380** |

| 1. Please indicate which sections of the specification have been revised. NB the approval panel will look at the whole specification and may comment on sections that have not been revised in this submission
 |
| --- |
| 1[ ]  | 2[ ]  | 3[ ]  | 4[ ]  | 5[ ]  | 6[ ]  | 7[ ]  | 8[ ]  | 9[ ]  | 10[ ]  |
| 11[ ]  | 12[ ]  | 13[x]  | 14[ ]  | 15[ ]  | 16[ ]  | 17[ ]  | 18[ ]  | 19[ ]  | 20[ ]  |

***Section C – must be completed for all modules***

| **Question** | **Answer**  |
| --- | --- |
| 1. Is this module (or any consequently withdrawn modules) compulsory in any courses?
 |  Tick if yes [ ]  |
| 1. Does the introduction of this module, or the withdrawal of other modules, potentially require changes to those courses?
 | Tick if yes [ ]  |
| 1. If so, are those potential changes the result of:

 (i) Changes to the Learning Outcomes of this module?  | Tick if yes [ ]  |
|  (ii) Changes to the term(s) in which this module is delivered? | Tick if yes [ ]  |
|  (iii) Changes to pre- and co-requisite modules? | Tick if yes [ ]  |
|  (iv) Other (please specify) |  |
| 1. If the answer to any of questions 5 to 7 is Yes - confirm that all the owners of the courses listed in section 7 of the specification have been informed
 | Tick if yes [ ]  |
| 1. Will any modules be withdrawn as a result of the introduction of this module to the module?
 | **No** |
| 1. Are there any implications for learning resources, including staff, library, IT and space? If yes, please confirm the Division has considered and planned for the allocation of the resources required
 |  Tick if yes [ ]  |
| 1. Term and year the new module will start
 | **Autumn 2023** |
| 1. Date this version of the module specification was approved by the Board of Studies
 | **3 March 2023** |
| 1. Rationale: please provide any contextual information that will assist members of the approval panel who may not be familiar with the discipline and custom and practice in your Division
 |  |
| 1. Please provide any additional information that may assist the approval panel, for example the rationale for assessment or an explanation of the learning and teaching methods if these vary from a commonly seen pattern
 |  |
| 1. High risk of non-delivery: confirm that more than one person is available to teach this module and that the Divisional Plan includes consideration of resources, cover and succession planning
 | **Confirmed** |
| 1. Division to confirm that consideration has been given to the title and curriculum description to ensure these are not overly constraining
 | Tick if yes [x]  |
| 1. Does the change to the module represent a change to CMA ‘material information’?
 | Tick if yes [ ]  |
| 1. Please outline what changes are being proposed to the CMA material information and what steps are taken by the Division to minimise the disruption
 |  |

**MODULE CHANGE REQUEST**

**Note : Date the changes take effect must be supplied in order for these changes to be made**

| **Question** | **Answer** |
| --- | --- |
| **Module Code:** | **BIOS6380** |
| **Change Required:**e.g. Module title/additional version/new delivery/new assessment pattern | **Assessment Pattern** |
| **Current Module Title:**  | **Bioinformatics and Genomics** |
| **New Module Title:**  | **N/A** |
| **Add a delivery Campus:**  | **N/A** |
| **Change week beginning:** e.g. Term 1, Term 2 , Terms 1-2 ( 24 week Module). If it is a non-standard period please state specific period that module will now run  | **N/A** |
| **Credit Change From (To/From):** | **To From N/A** |
| **Change to Assessment Pattern:**  | * **Workshop (Short Answer Questions) – 30%**
* **Assignment (2,000 words) – 70%**
 |
| **Change in reassessment method:**  | **N/A** |
| **Date changes take effect:**  | **September 2023** |
| **Notes:** |  |

1. KentVision Code and title of the module

BIOS6380 – Bioinformatics and Genomics

## Division and School/Department or partner institution which will be responsible for management of the module

Division of Natural Sciences (Biosciences)

## The level of the module (Level 4, Level 5, Level 6 or Level 7)

Level 6

## The number of credits and the ECTS value which the module represents

15 Credits (7.5 ECTS)

## Which term(s) the module is to be taught in (or other teaching pattern)

Autumn

## Prerequisite and co-requisite modules and/or any module restrictions

BIOS5320 – Skills for Bioscientists 2

## The course(s) of study to which the module contributes

Optional for the following courses:

BSc (Hons) Biology (and associated variants)

BSc (Hons) Biochemistry (and associated variants)

BSc (Hons) Biomedical Science

Not available as an elective module

## The intended subject specific learning outcomes.On successfully completing the module students will be able to:

8.1 Use DNA/protein databases, sequence searching methods, generate multiple sequence alignments, analyse residue conservation.

8.2 Use bioinformatics methods to analyse and model protein structure, function and interactions with small ligands and with other proteins.

8.3 Understand genomics approaches including – genome sequencing, comparative and functional genomics.

## The intended generic learning outcomes.On successfully completing the module students will be able to:

9.1 Demonstrate bioinformatics skills for data retrieval and analysis across the biosciences’ disciplines.

9.2 Demonstrate transferable skills including written communication.

9.3 Demonstrate analytical skills including analysis and presentation of data.

## A synopsis of the curriculum

Bioinformatics Data sources & Sequence analysis: Databases and data availability. Using sequence data for analysis – sequence searching methods, multiple sequence alignments, residue conservation, Protein domains and families.

Protein Bioinformatics Methods: Protein structure and function prediction. Prediction of binding sites/interfaces with small ligands and with other proteins. Bioinformatics analyses using protein data.

Genomics: An introduction to the analysis of genomic data, primarily focussing on the data available from genome sequencing – how it can be used to study genetic variants and compare genomes (i.e. comparative and functional genomics).

## Reading list

## The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

## The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

## Contact Hours

Private Study: 118

Contact Hours: 32

Total: 150 hours

## Assessment methods

13.1 Main assessment methods

* Workshop (Short Answer Questions) – 30%
* Assignment (2,000 words) – 70%

13.2 Reassessment methods

* 100% Coursework

## Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section 12) and methods of assessment (section 13)

**Module learning outcomes against learning and teaching methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 |
| --- | --- | --- | --- | --- | --- | --- |
| Private Study | **x** | **x** | **x** | **x** |  |  |
| Lectures | **x** | **x** | **x** |  |  |  |
| Computer Workshops | **x** | **x** | **x** | **x** | **x** | **x** |

**Module learning outcomes against assessment methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 |
| --- | --- | --- | --- | --- | --- | --- |
| Workshop | **x** | **x** | **x** | **x** | **x** | **x** |
| Assignment | **x** | **x** | **x** | **x** | **x** | **x** |

## Inclusive module design

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

## Campus(es) or centre(s) where module will be delivered

Canterbury

## Internationalisation

Science is an international discipline with widely applicable international resonance. This module presents subject-specific knowledge generated, developed, and refined by scientists around the world. Mastery of the learning outcomes will equip students to apply the knowledge in a wide range of international contexts and these will be addressed in making the content relevant to current global issues. The Division of Natural Sciences is an international community of students and staff and group activities and teaching will provide a platform for internationally-focussed discussion.

**DIVISIONAL USE ONLY**

**Module record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

| Date approved | New/Major/minor revision | Start date of delivery of (revised) version | Section revised(if applicable) | Impacts PLOs (Q6&7 cover sheet) |
| --- | --- | --- | --- | --- |
| 18 Dec 2018 | Major | Sept 2019 | 9, 13-14, 17 | No |
| 27 Nov 2019 | Minor | Sept 2020 | 13 | No |
| 3 Mar 2023 | Minor | Sept 2023 | 13 | No |

|  |
| --- |
| Revised FSO Feb 2020 |