MSc Bioinformatics

Project Module Booklet

Academic Year 2022/2023

(version 2023.02.06)

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Introduction to the Project Module

The Masters project provides students with an opportunity to undertake original research in bioinformatics. Objectives are:

- The students gain research experience in bioinformatics methodologies and techniques.
- The students have the opportunity to develop their own ideas and to demonstrate initiative and originality.
- The students learn to plan and organise their time.
- The students take responsibility for their own learning.

The project is equivalent to 4 taught modules in terms of credits (60 credits out of 180 in total for the MSc). The award of the MSc is subject to successful completion of a project. A Postgraduate Diploma (120 credits) or Postgraduate Certificate (60 credits) can be awarded, if a project is not completed. Following changes to the Common Awards Scheme regulations*, Masters students are no longer required to achieve a a distinction mark in the dissertation in order to be awarded a distinction overall for their Masters course.

Every project is expected to contain a computational component such as designing a database, creating a web server, or writing programs to analyse data. A wide variety of projects are offered each year in such diverse areas as structural modelling of proteins and nucleic acids, analysis of NGS data, genome analysis etc.

Projects are offered by members of staff within the Department of Biological Sciences and by a range of external supervisors from other academic institutions or from industry. Sometimes students suggest projects of their own that we are able to support. Externally supervised students will be assigned an internal contact within the department whose role aims to be pastoral.

* http://www.bbk.ac.uk/downloads/registry/common-award-scheme-regulations-21-22.pdf

Timeline & milestones of the MSc project

	Full-time students	**Part-time Year 1 students**	**Part-time Year 2 students**
Deadline for **supervisors** submitting a project	03/03/2023	03/03/2023	N/A
Deadline for students choosing a project	24/03/2023	24/03/2023	N/A
Project allocation	By start of summer term##	By start of summer term##	N/A
Meeting with supervisor to discuss annotated bibliography	End of May 2023	End of August 2023	N/A (should have happened in 2022)
Meeting with internal contact at Birkbeck (students doing EXTERNAL projects ONLY)	End of June 2023	End of June 2023 + End of June 2024	End of June 2023
Suggested date for submission of first thesis draft to supervisor	End of July 2023	End of July 2024	End of July 2023
Submission of thesis#	4:00 pm, 25/08/2023	TBC	4:00 pm, 25/08/2023
MSc viva dates	TBC (~mid-September 2023)	TBC	TBC (~mid-September 2023)

Note:
Dates in red are "hard" deadlines and must be adhered to.
All other dates are *suggested* deadlines and may vary slightly depending on supervisor and student schedules.

 # The deadline for the thesis submission applies to the electronic copy submitted on Moodle. We no longer require submission of a paper copy.

This is the latest date for project allocation. Most projects will be allocated within a week of the deadline for choosing a project.

Assessment of the MSc Project module

A final mark out of 100 is assigned to the MSc project module, carrying the weight of 60 credits out of 180 credits for the whole MSc course.

The formal distribution of marks for the MSc project module is:

- 85% of the mark is given for performance during the project + thesis quality
  See the sub-section "project mark" below for more information.

- 15% of the mark is given for performance at the viva
  See the sub-section "viva mark" below for more information.

- The annotated bibliography element is compulsory but is not assessed

***** Guidelines for marking the project thesis and performance are given in a separate section in this document. *****

Project mark

The project mark comprises three separate marks:

- The supervisor provides two marks, one for performance during the project and one for the project report (the thesis)
- A second marker, usually chosen by the projects organiser, who was not involved in the project, is asked to provide a mark for the thesis. This second marker is rarely an expert on the project subject but is usually well-versed in bioinformatics or in the field of biology that the project focuses on. Second markers are usually unfamiliar with the student's performance on the project and mark solely the content of the thesis.
- All marks are given out of 100 and are accompanied by short reports justifying the mark. The style of reports varies widely – most are one paragraph to one page long.
- Often, marks from first and second markers are in the same class (distinction/merit/pass/fail). When they are not, the marks and reports are examined closely by the external examiner and the other Exam Sub-board members and a collective decision is made. The Exam Sub-board reserves the right to moderate marks following the viva.

Viva mark

Every student who carries out an MSc project sits an oral examination. This is known as the *viva*. It lasts approximately 15-20 minutes. Questions at the viva focus on the project but in principle a student may be asked anything that was taught during the course. Selected students sit a viva in September in the presence of all members of the MSc Bioinformatics Exam Sub-board (the external examiner, Dr Williams, Dr Nobeli and a new member of staff that will be joining Birkbeck this summer). The remaining students are examined by internal examiners only in a similar viva, usually taking place at a later time in late

September or October. The examiners agree on a single mark for the viva at the end of the examination.

General advice to students

- Be in regular contact with your supervisor(s). Agree on an approximate schedule/frequency in advance and do your best to follow it.

- Mix reading of the literature with practical work
    - Often, the majority of the reading gets done at the start of the project but never stop searching for relevant papers and reading them!
    - Do not spend the first month reading and not trying out things!

- Display initiative and rely on your supervisor for guidance but do not expect step-by-step "to do" lists. Motivation and the ability to work independently are highly regarded when it comes to marking the project.

- Allow plenty of time for writing up
    - Do as much writing as you can along the way (keep notes of your methods and scripts, write summaries of your results to show your supervisor, create figures and tables for displaying the outcome of your work).
    - Submit a skeleton/outline of your report to your supervisor as soon as you can produce one.
    - Submit a draft to your supervisor *at least two weeks in advance* of the hand-in deadline (this should be a *reasonable* draft, with an appropriate structure in place and written in a way that can be understood by another person).

- If for any reason you need to take a break from the project, please contact immediately your supervisor to let them know. Please also cc the projects organiser or the administration team, if the break is going to affect your timely submission of the project.

- If you feel the project is not progressing adequately or you have any other concerns, please raise them with your supervisor first. If your project is externally supervised, you may discuss your concerns with your internal contact. You are also welcome to contact the projects organiser (Irilenia Nobeli, i.nobeli@bbk.ac.uk) with any questions/problems you may have.

General advice to students (for students doing EXTERNAL projects only)

- Please respect the time that externals put into supervising a project.
    - Be as flexible as possible with arranging meetings and always be punctual.
    - Be honest about your understanding and progress. Often, external projects are hard and in areas that we have not covered well. If you agree to take on a challenge like this, you need to ensure that you are getting the amount of supervision required for it and this will not happen if you do not disclose your knowledge gaps.

- Arrange to meet your internal contact at Birkbeck at least once for every year spent on your project. We suggest:
    - By the end of June for full-timers and second year part-timers.
    - By the end of August (year 1) for first year part-timers.
    - Please email confirmation that the meeting has taken place to Irilenia Nobeli (i.nobeli@bbk.ac.uk) and cc your internal contact.

Supervisor responsibilities

- The range of abilities, knowledge and experience varies widely within the course. Please manage your expectations accordingly but encourage students to go out of their comfort zone and tackle problems that are interesting, challenging and will help them develop their research skills.

- **Before submitting** a project, **ensure that you have access to appropriate resources** to allow the student to carry out the project. Do not assume, for example, that the department can provide unlimited access to hardware and software. We can accommodate requests in some cases but we need to be told about your requirements well in advance.

- ~~**If you are supervising a student on a Student Visa (what used to be called "Tier 4" visa) you are required to meet with the student at least 3 times in each term of supervision during the period of the project (this will normally be just the summer term) and you must document your meeting for auditing purposes**. We suggest simply sending an email to the projects organiser (i.nobeli@bbk.ac.uk) with a very short summary of the meeting (a few lines will be adequate).~~

  As our course is now officially distance-learning only, no students will be issued with student visas based on their registration on our course. Hence, there should be no requirements to meet the students face to face during the period of the project. Should any of the older students be on such visas, the supervisors should make note of the point struck out above.

- You should aim to meet your student 5 times as a minimum but meeting once every week or every two weeks is not unusual.
  - This number is a guideline only. It will vary depending on the project and it may be that meetings will be clustered during certain periods of the project, interspersed with periods of less contact. Although it is the student's responsibility to arrange these meetings, please make an effort to keep in touch.
  - You may want to encourage the student to email you a short summary shortly after the meeting. This ensures that a) both sides have understood what has been agreed and b) there is a record of the plan for the next days/weeks.

- You should hold one meeting in the early stages of the project to discuss your student's annotated bibliography (see separate section for a description of this milestone).
  - Provide your student with feedback and highlight any misunderstandings that could lead to problems during the project. Suggest further reading, if appropriate.

- You should aim to review at least one draft of the MSc project final report (the *thesis*).
    - Please provide constructive feedback to help the student improve their draft. Ideally, feedback should be given at least one week in advance of submission, preferably more, to allow the student time to act on your recommendations.

- Inform your student of your holiday/conference/other commitment plans, especially if you take time off around the time of submission.

- You will be asked to assess separately the performance of the student and their thesis. This requires you to write two (half to one-page) reports and give corresponding marks for these two elements of assessment. We will need to have your reports and marks well in advance of the date of the viva, hence we expect supervisors to provide these usually within two weeks of the thesis submission. Please ensure that your plans allow you adequate time to do this.

- If you feel the project is not progressing adequately or you have any other concerns, please raise them with the projects organiser (Irilenia Nobeli, i.nobeli@bbk.ac.uk).

Internal contact responsibilities

- Where a student has been allocated an external project, we assign to the student an internal contact from Birkbeck.
    - This is usually the personal tutor or one of the four members of staff responsible for the majority of teaching on the course (Nobeli, Shepherd[$], Orlova and Williams).
      $ Prof. Shepherd retired as of March 2022.

- The role of the internal contact is pastoral.
    - Although internal contacts may be able to advise on scientific issues and could complement the expertise of the external supervisor, their role is primarily to ensure that the partnership between the student and the external supervisor is a successful one and that there are no significant issues hindering the progress of the project.

- It is the responsibility of both the student and the internal contact to arrange a meeting at a mutually convenient time to discuss progress.
    - We suggest that this meeting should take place by the end of June for full-timers and second year part-timers and by the end of August for first-year part-timers.
    - During that meeting we suggest that you probe the student on:
      a) their understanding of the aim of the project
      b) their grasp of the methods to be applied
      c) the availability of software and hardware required to complete the project and
      d) the extent and quality of supervision they are receiving.

- If there are any issues raised that need to be acted upon, the internal contact must inform the projects organiser (Irilenia Nobeli, i.nobeli@bbk.ac.uk) as soon as possible. It is part of the responsibility of the internal contact to help us resolve any issues.

Project Elements - The annotated bibliography

Summary

The annotated bibliography is a compulsory, non-assessed element of the early stages of the MSc project. The bibliography should contain 5-10 references, each one annotated by the student to explain its main results and its relevance to the project. The intention being to encourage all students to engage in structured thinking about their project in the context of previously published work as early as possible.

Here is a brief definition of an annotated bibliography:

An annotated bibliography: "…gives an account of the research that has been done on a given topic. Like any bibliography, an annotated bibliography is an alphabetical list of research sources. In addition to bibliographic data, an annotated bibliography provides a concise summary of each source and some assessment of its value or relevance…" (Knott, 2014).

More information on annotated bibliographies can be found here:

- Bisignani D. and Brizee A. (2013) Annotated bibliographies. [online] Available from: http://owl.english.purdue.edu/owl/resource/614/01/ [accessed 20 March 2017]

Format of the annotated bibliography

Each entry should consist of

(1) A full reference for each article in a standard journal format (e.g. that of *Bioinformatics*),

(2) a one- or two- sentence summary providing context and indicating the relevance to the student's project,

(3) a paragraph (or at most two) describing and evaluating the study, emphasising the key results and/or methodologies of the work. A figure may also be appropriate.

Frequently Asked Questions (on the annotated bibliography)

When should I prepare the annotated bibliography?

In theory, as soon as you have been allocated a project you may start working on it, including reading the literature and producing a bibliography. In practice, we expect full-time students to produce the annotated bibliography and discuss it with their supervisor by the end of May. Part-time students will need to achieve the same milestone by the end of the summer period of their first year. Deadlines will be confirmed on Moodle in the near future.

Why do I need an annotated bibliography?

The task of producing an annotated bibliography has the following aims:
a) to provide a formal framework in which the supervisor can provide some early input and guide the student towards relevant resources,
b) to encourage the student to engage with the literature and to read the most relevant important papers in order to help them understand and plan the practical aspects of the work,
c) to provide a starting point for discussions and exchange of ideas between the student and the supervisor.

What should I do once I prepare the bibliography?
You should email a copy to your project supervisor(s) and arrange for a meeting to discuss your bibliography. The aim of this meeting will be to present your findings to your supervisor and discuss your understanding of the literature and its relevance to your project. Your supervisor should give you feedback, including their thoughts on how these studies could benefit your project and any additional studies that they might consider as being of fundamental importance.

Can I include fewer than 5 papers?
We suggest thoroughly reading and subsequently annotating at least 5 papers. It is possible that for very novel projects, fewer than 5 papers may be directly relevant and in such a case you should agree an appropriate number of articles with your supervisor.

Can I include more than 10 papers?
No. Certainly you can read more than 10 and discuss them with your supervisor, but in case of a surplus, just submit your most relevant/important ten.

Can I include reviews?
The student is encouraged to read reviews and discuss them with the supervisor but the annotated bibliography should be based only on ***primary*** research articles.

Is the annotated bibliography marked?
The annotated bibliography does not constitute formally a separate form of assessment. However, supervisors will take the annotated bibliography and related discussion into account when determining the student's performance mark for the project. Students will be given an opportunity to revise the submitted annotated bibliography should the initial submission be unsatisfactory.

Acknowledgement
Part of this section ("The annotated bibliography") is based on the guidelines written by Dr Dick Rayne for writing annotated bibliographies (for an undergraduate module, Biological Sciences, Birkbeck).

Project Elements - The MSc report (otherwise known as thesis or dissertation)

A) Aims and objectives of the report

The aim of the project is to allow students to develop their own ideas in a small piece of research. Creative and thoughtful work will be credited over and above the repetition of tried and tested techniques.

Much emphasis is given to the production of a thesis in a proper scientific format since this is the main means of assessment. The format should follow that of a serious scientific paper, and you should carefully read all sections from several papers to see what information is found in each section and how this information is presented.

B) Organisation of the report

Title page

This should include the full title of the project, your name and your supervisor(s), degree course and institutional address.

Abstract or summary

The abstract or summary should contain an outline of the work carried out and any significant results achieved.

Contents

The contents should list the chapters and sections, the tables and figures with the corresponding page numbers.

Acknowledgements

This section is optional.

Introduction

The introduction should record the background to the project and place the project in context with already published information. Essentially a review of prior work in the area that provides context for your research question(s) and results. It should also describe the aims of the project.

Materials and Methods

The materials and methods section should describe in detail the procedures followed, indicating an awareness of any likely pitfalls or problems with the techniques. Published techniques need not be described in detail but should be referenced. The student should demonstrate an understanding of established techniques. N.B. Results obtained by the student should not usually appear in this section.

Results

Data must be presented in a form that makes clear the significance of any results obtained by the student. Wherever possible, the results should be presented in the form of tables and graphs (with statistics, where appropriate). Figures and tables should be numbered and have appropriate titles and captions (tables may have footnotes, if needed). All figures should be referred to in the text. Figures should be of publication quality. You are required to have some original figures representing your results. However, if some figures are copied from somewhere, they need to be appropriately referenced. You should be careful not to infringe on other people's or institutions' copyright. Figure legends should provide sufficient detail that the figure can be understood independently of the main text. You must also describe your results in the text drawing attention to the evidence in the relevant figures. Attention should be drawn to interesting results as they appear in this section but substantive discussion of the results should be left until the next section.

Discussion & Conclusions

The discussion should examine in detail the significance of results and place them in the context of other published work. You should not reiterate your results, except as part of concluding statements or to link sections of the discussion. Any failings or shortcomings of the project should be identified. In this section consideration of the greater significance of the results should be demonstrated. An outline of what follow-up work could be carried out may be useful (i.e. future work).

References

References should be cited in text and listed at the end in a consistent format. You can choose a style for referencing from one of the well-known journals in the field, either Cell or Bioinformatics. It is not important which of these styles you choose, but once you have chosen a format, you must stick with it throughout your report. You may find that a reference manager like EndNote, Zotero or BibTex will save you a lot of time in the long run, but you can also opt to add references manually, if you prefer.

C) General guidelines for preparing the report

1.

You should talk to your supervisor about your results and how to present them before compiling the report. Supervisors will be happy to comment on drafts of the report before final submission (usually one or two) but make sure you provide them with enough time for them to make useful suggestions. Remember that July and August are times when staff may be on holiday or at conferences, so find out their arrangements and give them due notice. Please note that a supervisor seeing your report before submission does not guarantee that the project will be considered worthy of a pass by the board of examiners.

2.
A check list is provided. Read this carefully and ensure that the report conforms to these points.

3.
The length of the report should not exceed 10,000 words. This is a guideline and we will not penalise longer reports (within reason). Much shorter reports may be appropriate for some projects, so do not worry if yours is not close to this limit. It is the **content** that counts.

4.
The finished copies of your report should be typed, 1.5-spaced on A4 paper. We no longer require a printed copy of your report. An electronic copy, preferably in PDF format, is sufficient.

5.
The reports should have the following structure: Title, Abstract, Contents, Acknowledgements (optional), Introduction, Materials and Methods, Results, Discussion and Conclusions, References, Appendices (optional).

6.
The report should be paginated (Page 1 = Title page) and contain a table of contents.

7.
Tables, figures, etc. may be interleaved within the main body of the text or placed in order at the end of each chapter. Complex or detailed tables of results, computer code and output, etc. should be included as appendices.

8.
You should explicitly state in your report details of your code development. For example, if you wrote a Perl script or a Python program to carry out a file format translation, you should write a sentence like: "A Perl script was written to translate a PDB file into a MOL2 file format". If you wrote a series of scripts that are closely related, you can include all of them in a single statement. This is meant to facilitate marking for the second markers (who have not supervised you and do not know the extent of your programming abilities or the amount of code you developed) and performance assessment by both markers and the exam board. **Note that we do not expect the actual code to be included in the report but attaching short examples of code as an appendix (in single-spaced small font) is acceptable for small scale programs; use a software source repository like GitHub for larger projects.**

9.
A list of non-standard abbreviations should be inserted before the introduction.

D) Checklist for preparing the report

Abstract

1. Is the abstract between 200-300 words?
2. Does the abstract describe the nature of the work and the results obtained?

Introduction

1. Does the introduction contain a clear statement of the aims of the project?
2. Does the introduction place the project work in context with a thorough, but concise, review of the relevant literature?

Materials and Methods

1. Does this section describe in detail the procedures followed? Could you carry out this project following the methods reported here?

Results

1. Does this section contain results in a tabular and/or graphical form?
2. Are the tables enumerated, each with a correct description of the contents? Are the columns and rows correctly labelled together with units of measurement?
3. Are the figures enumerated and appropriate for the type of data? Does each have a legend containing an accurate description of the contents of the figure?
4. Do graphs have the axes labelled correctly (including units)? Is the scale of the axes appropriate for the data?
5. Are statistical results used when necessary? Are the correct tests used?
6. Are figures clearly labelled with a key to abbreviations in the legend and an accurate description of what they are?
7. Does the text draw attention to the salient features of the figures or tables, rather than simply repeat what is already in them?
8. Is the Results section structured to make clear the significance of the results and to provide a basis for subsequent discussion?

Discussion

1. Is it clear that the significance of the results is appreciated?
2. Are the results of the project discussed in relation to other published work in the field?
3. Are the results obtained discussed in the wider context?
4. Are the limitations of the approach used in this project adequately discussed?
5. Are any working hypotheses for future work proposed?

References

1. Are the references in the text referred to in the correct manner (according to the style of referencing you have picked)?
2. Are the references listed in the text also in the reference section?

E) Information for submitting the MSc report

- You should submit a **PDF-formatted** copy of your thesis on Moodle (this will be checked for plagiarism)
    - Deadline this year is: 4:00 pm, Friday 25/08/2023
- To submit, look out for an item named "MSc thesis submission" in the **Project MSc Bioinformatics (2022_23)** module on Moodle**,** course id BBK_CRYS015D7_2023 (this is now under the tile Thesis (forms and submission)).
- You should send an **identical** electronic copy to your first supervisor via email.

Guidelines for marking the project thesis (applicable to both supervisors and second markers)

Please complete your report by the 8th of September 2023
and email to:
i.nobeli@bbk.ac.uk
using "MSc Bioinformatics mark and report" as the title of your email.

Important: Any suspicions of plagiarism should be reported to the Course Director immediately.

Marking scheme

We do not provide a marking scheme that breaks down the overall mark into parts because we feel that the fairest assessment of a thesis is done when it is viewed by the marker as a whole, and not as a sum of individual parts. However, the following may be used as a guide of what we expect of our MSc students at different levels:

"Pass" (50-59%)

We expect students awarded a Pass to have a fair understanding of the biological problem underlying their project (typically reflected in their introduction and discussion/conclusions) and to have carried out some independent work (e.g. by writing a program or few simple scripts that may not be of great quality but "do the job"). These students may not have reached the stage of producing useful results, or may be confused about some aspects of the work.

Theses awarded a Pass often satisfy some, but usually not all, of the following basic criteria:

- The biological problem is presented in the thesis and the student demonstrates a reasonable understanding of it.
- A basic level of competence in computing is evident (e.g. through the writing of simple Python scripts).
- The work is in an appropriate form for a scientific project with a reasonable choice of citations and a coherent conclusion (with evidence used to support it).
- The overall quality of the work is generally of acceptable level.
- The quality of presentation is of an adequate standard, with well-structured arguments, appropriate visual content (e.g. graphs, diagrams, etc.), and acceptable use of English.

"Merit" (60-69%)

Theses awarded a Merit usually meet **one or few** of the following additional criteria:

- The student demonstrates good knowledge of the literature.

- There is a good critical evaluation of previous work.
- There is a critical evaluation of the student's own work.
- There is sound justification of experimental design decisions.
- There is a novel solution to the conceptual problems encountered.
- There is evidence that the student has made an exceptional effort in terms of the amount of work undertaken.
- The code developed is deemed to be exceptional, either in quality or quantity.

"Distinction" (70-79%)

Theses awarded a distinction often satisfy several of the above criteria. They usually reflect originality in either thought or methods. It is not uncommon for such theses to include material worthy of publication in a peer-reviewed journal or conference proceedings. Note that, if a thesis fails to fully meet some of the above criteria, it may still be awarded a Distinction provided, on balance, these failings are significantly outweighed by exceptional qualities in other areas.

"High Distinction" (>= 80%)

The thesis is exceptional and usually meets all of the criteria given above.

"Fail" (40-49%)

Although the thesis does not qualify for a "Pass" according to the above criteria, there is some aspect of the work that makes it redeemable, such as the student has put a lot of effort in writing up, or has attempted several approaches (but not with enough competence to warrant a Pass). A student who gains a mark in this range will subsequently be given the opportunity to demonstrate (through reassessment) sufficient additional competence to justify raising their mark to a Pass.

"Poor Fail" (<40%)

The thesis is inadequate in many respects and fails to meet several basic criteria, for example there is no evidence that the student has reached a basic competence in programming and/or that adequate time and effort was spent on the project.

Guidelines for marking the student's performance (supervisors only)

- Supervisors should submit a mark on the student's performance, in addition to their mark for the student's report. We ask supervisors to take into consideration the following:
    - motivation and effort
    - initiative
    - ability (including technical ability, theoretical understanding and organisation skills)
    - degree of supervision required

- The mark should be given in the range 0 to 100 (see marking scheme above) and it should be accompanied by a short report justifying the mark.

- **Supervisors are asked to include in their report on the performance a brief outline of the project and its aims** (a few sentences are usually adequate).
    - This helps the members of the Exam Sub-Board grasp the essence of the project and makes it easier for them to assess the student's performance fairly.

Marking form (supervisor)

Dept. of Biological Sciences
MSc Bioinformatics
September 2023

Report on MSc Thesis

Malet Street
London WC1E 7HX
Tel: 020 7631 6800
Fax: 020 7631 6803

Student's name	
Thesis Title	
Supervisor(s)	
Assessor (first)	
Date	
Mark for Report (out of 100)	
Mark for Performance (out of 100)	

Please complete your report and email to i.nobeli@bbk.ac.uk by the 8th of September 2023.

Short description of the project

Please communicate in a few sentences what was the project about, its original aims, how they were adapted during the course of the Masters project and whether the student achieved what they were asked to do.

Assessment of the student's performance

Please comment on the following aspects of the student's performance:

- *Motivation and effort*
- *Initiative*
- *Ability (technical ability, organisation and theoretical understanding)*
- *Degree of supervision required*

Assessment of the dissertation

Please provide brief comments that justify your mark. You do not need to mark individual components but it would be helpful to address the following:

- *Overall organisation and presentation of the report*

- *Understanding and clarity of presentation of the biological question*
- *Coverage of previous literature, including critical evaluation of previous work*
- *Use of appropriate methods to address the project question*
- *Evidence of competence in computing and statistical analysis (if appropriate)*
- *Well-presented results, including appropriate tables, informative figures and clear use of English*
- *A critical evaluation of the student's own work*
- *Effort, as apparent from the amount and difficulty of work presented*
- *Originality in thought or methods*

More detailed guidelines of what is expected and a marking scheme guide are included in the MSc Project module booklet, distributed to all students, supervisors and markers at the start of the project. The latest version of the booklet can be found on Moodle (or email i.nobeli@bbk.ac.uk to obtain a copy).

Marking form (second marker)

Dept. of Biological Sciences
MSc Bioinformatics
September 2023

Report on MSc Thesis

Malet Street
London WC1E 7HX
Tel: 020 7631 6800
Fax: 020 7631 6803

Student's name	
Thesis Title	
Supervisor(s)	
Assessor (second)	
Date	
Mark for Report (out of 100)	

Please complete your report and email to i.nobeli@bbk.ac.uk by the 8th of September 2023.

Assessment of the dissertation

Please provide brief comments that justify your mark. You do not need to mark individual components but it would be helpful to address the following:

- *Overall organisation and presentation of the report*
- *Understanding and clarity of presentation of the biological question*
- *Coverage of previous literature, including critical evaluation of previous work*
- *Use of appropriate methods to address the project question*
- *Evidence of competence in computing and statistical analysis (if appropriate)*
- *Well-presented results, including appropriate tables, informative figures and clear use of English*
- *A critical evaluation of the student's own work*
- *Effort, as apparent from the amount and difficulty of work presented*
- *Originality in thought or methods*

More detailed guidelines of what is expected and a marking scheme guide are included in the MSc Project module booklet, distributed to all students, supervisors and markers at the start of the project. The latest version of the booklet can be found on Moodle (or email i.nobeli@bbk.ac.uk to obtain a copy).