MODULE CODE	BIO6307	MODULE LEVEL	Six
MODULE TITLE	Masters Research project in Bioinformatics		
LECTURER(S)	Dr A. R. Dalby Dr M.R. Amos and Prof N.J. Talbot (Module Coordinators)		
CREDIT VALUE	90	ECTS VALUE	45
PRE-REQUISITES	BIO6301, BIO6302, BIO6303, BIO6304, BIO6305, BIO6306		
CO-REQUISITES	None		
DURATION OF MODULE		26 weeks	
TOTAL STUDENT STUDY TIME		26 weeks	

AIMS

The aim of this module is to give students experience in undertaking a substantial research project in bioinformatics and to put into practice the knowledge they have acquired from the taught elements of the programme. Industrial support in the form of problem specification and industrial co-supervision is welcome.

The main objectives are that, by the end of the module, students will have carried out a piece of original research or research which extends our knowledge on a topic in any area of Bioinformatics, will have analysed the results using appropriate methods, and will have learned how to disseminate the results in an appropriate manner.

INTENDED LEARNING OUTCOMES

At the end of the module, students will:

(a) have undertaken a deep and self-motivated exploration of a topic which is of relevance to the bioinformatics research community and/or industry and which qualifies them to be knowledgeable experts in the subject matter of that topic (ILO1);

(b) possess the necessary skills to follow systematically and consistently the phases of project development as specified by a schedule and appropriate design, implementation, testing and validation methods, as agreed by the supervisors (ILO2);

(c) have demonstrated the application of sophisticated and appropriate analysis and development techniques at each phase of the project (ILO3);

(d) gained experience in the preparation of a journal article based on individually motivated research and work (ILO4).

LEARNING/TEACHING METHODS

Introductory preparatory sessions on project management in various taught modules as well as experience in undertaking mini-projects as part of individual taught modules; supervision by one or two members of staff; presentation of research seminar and poster session; preparation of a journal article.

ASSIGNMENTS

Stage I for all students (assessed) and Stage II for industrially located students (compulsory but not assessed) – ILO1 and ILO2; project presentations in the form of a research talk and poster presentation (assessed) – ILO3; Final report (assessed) – ILO4.

ASSESSMENT

There are four deliverables for this module, all of which are assessed as follows: Poster presentation (15 credits); Research talk (15 credits); Paper (60 credits).

SYLLABUS PLAN

Overview of arrangements: Each student will have at least two supervisors, depending on the nature of the project topic: (a) from the main contributing unit (Biological Sciences and Computer Science) or one from each contributing unit; or (b) one from one of the contribution units and another from another sector of the University; or (c) one from one of the contributing units and one from industry.

Content: All students will receive introductory sessions throughout the year and in different modules on how to prepare for their project (literature review, scheduling, project management). A list of project areas and potential

supervisors will be distributed during the course of the year, and each student, in consultation with the appropriate potential supervisors, chooses a project area with the advice of staff. The student will design a project, in consultation with the chosen supervisory team, within the specified project area.

Stages of the project:

(a) All students must submit a document (Stage I) which consists of a literature review and research grant proposal. All resource requirements (e.g. funding, equipment, materials, etc) must be clearly stated at this stage. The deliverable will be presented as a fully costed research grant proposal in EPSRC format, with the literature review attached as an appendix.

(b) All students ***on industrial placement*** must also submit to their academic supervisor in Exeter a Stage II document, which consists of a satisfactory progress report and a provisional schedule for completing their project. The precise nature and content of this submission must be agreed with the academic supervisor by email, telephone or written correspondence and must also be countersigned by the industrial supervisor. Failure to submit this compulsory document may result in the student being removed from the industrial placement. Students will receive feedback from the academic supervisor on the documents submitted. It is also possible that the academic supervisor will arrange a meeting with the industrial supervisor and student before and after receiving the Stage II documentation to identify and resolve any problems and difficulties concerning the final submission (below).

(c) Written feedback from the supervisors on Stage I and (for industrially placed students) Stage II will be returned to students for information.

(d) All students must present a research talk and a poster session on their project 1-2 weeks before the project submission date to obtain feedback from research staff and students in the two units. **All students, including students on industrial placement, must ensure that they are available in Exeter during this week for their presentations and talks.** A timetable of talks will be provided by the Module Coordinators during the early part of the Summer Vacation, after discussion with all students, supervisors, staff and the External Examiner. Presentations from all project students will take place on one day or perhaps two days, depending on the number of students involved.

(e) The final deliverable is the project report presented in the form of a paper to a specified journal. The report must be formatted according to the submission guidelines of the journal and must conform to the specified word length as given in the guidelines.

Further information, and deadlines, will be supplied in the expanded module description handbook distributed to all students.

INDICATIVE BASIC READING LIST

As agreed between student and project supervisors. It is likely that reference will be made to the most recent articles and reports in the field.