

DEPARTMENT OF BIOLOGICAL SCIENCES

BIOLOGICAL SCIENCE HONOURS (BIO4000W)

&

MARINE BIOLOGY HONOURS (BIO4001W)

Our one-year Honours courses aim to introduce students to research and to develop an enhanced understanding of scientific theory and practice.

Queries about the course in general should be directed to Prof Muthama Muasya (Room 3.18.2, HW Pearson Building; muthama.muasya@uct.ac.za; 021 650 3725; 083 724 4983).

Application and acceptance criteria

- Application for admission into Honours should be done via the online UCT postgraduate studies application form (available at <http://www.uct.ac.za/apply/applications/forms/>). Note that applicants for honours are not required to submit a research proposal or outline but will be asked for a brief motivation as to why you want to pursue honours at UCT (see below).
- Students attaining an average of 70% or more in relevant third-year level science courses are normally assured of acceptance into Honours. We also consider applications from all students achieving 3rd year averages of 65% or more. Places are limited on both courses and the selection process is competitive.
- Note that factors other than marks may also be considered when applications are reviewed, and that final acceptance into Honours is at the discretion of the Head of Department. With this in mind, all applicants are asked to submit a brief statement (max. 200 words) providing any additional information (e.g. relevant work experience) which might strengthen their application, as well as the names and email addresses of two academic referees.
- Read more at <http://www.biologicalsciences.uct.ac.za/bio/postgrad/honours>

COURSE STRUCTURE

Modules will involve lecture-style teaching, group discussions, self-driven research and presentations, field and laboratory work.

Compulsory General Modules

Material covered in these blocks is geared towards (i) development of advanced statistical and numeracy skills; (ii) development of basic research and data management skills; (iii) development of basic GIS skills; (iv) provision of a foundation in the philosophy and practice of science, (v) development of scientific writing and presentation skills; and (vi) development of digital imagery skills. The course starts with the Fundamental of Science module and the other modules will run at various times during the year (see final timetable).

- The statistics module has been scaled down to 1 week. Students entering BIO honours are generally expected to have completed STA2007 (or an equivalent from a different institution). Where they lack this prerequisite, **they will be required to register for**

(occasional studies registration) and complete STA5014Z in the first semester of their honours year. Each such student will need to pay the modest fee charged for this course in addition to his/her honours course fee.

- Attendance at lectures and completion of all course deliverables is a DP requirement of the course.

Elective Modules and Theory Exam

- A list of modules offered will be made available in the early in the course and module selection must be completed within two weeks.
- Each student is required to complete six elective theory modules on offer by academics in the department.
- BIO4000W students have unrestricted module choice. BIO4001W students are required to complete a minimum of four marine-themed modules.
- Each elective module runs full-time for a period of one week, and typically requires students to read extensively and participate actively in discussions of the material covered. There will be at least one deliverable attached to each module and attendance at activities associated with the module is compulsory. Some modules may also involve a practical or field-based component. You will need to manage your time very carefully so as to balance the requirements of your research project with those of your modules.
- Each module will be evaluated according to the module coordinator, AND as part of a three-hour Theory Examination in November. This exam will contain one question relating to each module, of which you must answer four.
- Queries about within-module activities should be directed to the module coordinators.
- **Attendance at all module-related activities is compulsory.**

Research Projects

- A list of potential projects will be available early in the course. Follow up with the academic offering the project you are interested in. You can also develop your own alternative project in consultation with an appropriate academic.
- Project-related work accounts for **40%** of the total course mark (**thesis 30%, project poster 5%, project seminar 5%**). Don't overestimate the amount of time available to you - before you know it, the end of the year will be upon you.
- ALL students are required to conduct **ONE** research project, for which 12 weeks have been allocated. Projects run concurrently with theory modules, so your time management and planning is of the utmost importance. Both module deliverables and project commitments need to be planned carefully by you.
- **Projects must be supervised or co-supervised by an academic member of staff in the Department of Biological Sciences.**
- For students registered for BIO4001W Hons Marine Biology, the project must have a clear marine biology focus.
- You will be required to submit a 2-page project proposal in March.
- You will be required to submit a complete draft of the project write-up three weeks prior to the final project report hand-in. Supervisors will provide you with feedback/suggestions for improvement, which should be addressed in the final report.

- Final project reports are to be submitted as two, bound hard-copies and a .pdf file.
- Both draft and final report versions will be marked (**these are weighted 30% and 70% respectively**).
- A research poster detailing your project and suitable for presentation at a scientific conference will also be produced.
- At the end of the year each student will be required to present the results of their project to the department in a mini research symposium. This is marked by all academics present and the final mark awarded is the average of these.

Theory essay

Students will write a 4000-word essay on one of a number of topics in contemporary biology which will be provided in April. The essay topic **CANNOT** be linked to your project topic and supervisor/s in any way. BIO4001W students are **NOT** limited to marine-themed topics for this deliverable.

Course reading

During the course students are required to read **THREE** books from the following list. Two of these, chosen from the list of elective readings below, will be the basis for two book reviews written during the course. The third book is required reading for the course ('What Makes Biology Unique' by Ernst Mayr) and is examined in the General Exam paper in November. All books are provided in e-book format on Amathuba.

Required reading for ALL Hons students (examined in November):

What Makes Biology Unique? - Ernst Mayr (2004)

Elective reading for book reviews (choose TWO from list below):

The Unnatural History of the Sea - Callum Roberts (2007)

What a Fish Knows: The Inner Lives of Our Underwater Cousins - Jonathan Balcombe (2016)

Rewilding: The Radical New Science of Ecological Recovery - Paul Jepson & Cain Blythe (2020)

Life Changing: How Humans are Shaping the Course of Evolution - Helen Pilcher (2020)

Silent Earth: Averting the Insect Apocalypse - Dave Goulson (2021)

Jungle: How Tropical Forests Shaped the World - Patrick Roberts (2021)

Examinations (November)

Two 3-hour examinations are written in November. A Theory exam (Paper 1) which covers the elective modules (see Module section) and a General exam (Paper 2). The General exam tests students' engagement and general understanding of science and biology, with a focus on topical issues and the ability to write critically about them. The prescribed book for the course is also examined as part of this exam.

Assessment

Both the non-project component of the course (general module, elective modules, essay, book reviews) and the project component (project, poster, seminar) each carry a sub-minimum of 50%. NOTE: Each of these components have to be passed separately with a minimum of 50% each for the award of the degree.

Mark breakdown

Course component	Total (%)
Compulsory coursework (stats, data management, sci comm, GIS, phil & history of science)	10 (2% each)
Theory essay	5
Book reviews x2	5 (2.5% each)
Elective coursework	20
Project and poster	35 (thesis 30% + poster 5%)
Project seminar	5
Examinations	20
Total	100%