

RHODES UNIVERSITY
DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY
HONOURS PROGRAMMES: 2013

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1 INTRODUCTION

The Department of Zoology and Entomology offers an Honours course in four specialisations: **African Vertebrate Biodiversity**, **Entomology**, **Marine Biology**, and **Zoology**. Joint Honours programmes within the department and joint Honours courses with other departments may be considered for outstanding students.

The Honours course in the Department of Zoology and Entomology is designed to provide **training in skills in the acquisition, interpretation and communication of information with specific reference to biological research**. These are key skills for scientists and consultants, and in many other careers such as education and business. The course's emphasis is on comprehension, independence and creativity, and NOT on rote learning. Students are expected to read widely and critically.

The course has three main components: training in scientific research skills, including two original research projects; training in scientific communication, both written and spoken; and exposure to specialised topics through tutorials, seminars and reading. There is a compulsory short field trip for all Honours students. This serves as a chance for you to get to know your fellow students. Similarly, you may be able to attend a professional scientific conference that will introduce you to the national professional community.

2 STANDARDS OF PERFORMANCE

Professionalism. The course is designed to equip its graduates to meet standards of performance and behaviour that are expected in the professional working world. We require all students to show a high level of professional pride in their work. For instance, all submitted work should be original, without spelling errors, and referenced competently. The same level of professionalism is expected at tutorials where students must have done the necessary background reading.

Plagiarism is a serious contravention of professional standards. It also undermines the purpose and certification of university courses and is punishable by rustication in that context. Ensure that you are fully familiar with the University's policy on plagiarism:

<http://ruconnected.ru.ac.za/course/view.php?id=1378>

Time Management. The Honours year is designed to be a busy one that will provide you with time management challenges that are typical of the professional working environment, and your workload has accordingly been timetabled carefully. At any one time you may have two or more tasks in hand in addition to your projects. It is essential that you quickly master the management of your workload to produce quality work while submitting all assignments on time.

Honours students are expected to work daily in the Department and are encouraged to join the staff and postgraduates at tea. The Honours year, unlike your undergraduate courses, is not semesterised and you are expected to be here working from 4th February until your

final examination. The department does allow time for Honours students to have a short vacation in the middle of the year. This **MUST** BE organised and permission granted through the course co-ordinator, just as leave is arranged in the professional world.

Deadlines. All assignments are scheduled to be submitted to the course co-ordinator by 16:30 on Fridays on the dates indicated in the course timetable, and may be collected from there after marking. **Overdue submissions will have their possible marks deducted at the rate of 20% per day**, e.g. material handed in the following Monday will be marked out of 60%. Permission to submit work late may be granted under special circumstances but students **MUST** request permission well in advance of the deadline from the course co-ordinator, who will liaise with the relevant lecturers.

3 COURSE STRUCTURE

The course covers two principle areas: training in the key research skills of *gathering, interpreting and communicating information*, and advanced studies in specific fields of research. The training in experimental design and scientific communication will expose students to the basic skills to undertake their assignments in the rest of the year. These skills will develop with practice during the year. The advanced studies will allow students to explore specific career directions critically.

3.1 ADVANCED STUDIES OF RESEARCH FIELDS

One of the aims of the Honours course is to ensure that students get a broad-based knowledge of Zoology, and several activities promote this.

3.1.1 Tutorials

The tutorial courses detailed on the appended timetable serve to contextualise research and communication skills in particular areas of professional biology. Each course has a fixed curriculum and students must attend all tutorials in their programme.

3.1.2 Set Works

During the year you are expected to read the following books and submit reviews of two of them. Copies are available in the library.

- Nessa Carey - *The Epigenics Revolution: How Modern Biology is Rewriting Our Understanding of Genetics, Disease and Inheritance*. Icon Books (2012)
- Frances Ashcroft - *The Spark of Life: Electricity in the Human Body*. Norton (2012)
- Richard Pearson - [*Driven to Extinction: The Impact of Climate Change on Biodiversity*](#). Sterling (2011)

3.1.3 Current Awareness

This component of the course is examinable, particularly in the oral examination.

Discussion groups. The class will meet with each lecturer on the dates indicated in the course timetable to discuss a recent paper that they have been asked to read.

Departmental Seminars. Honours students **MUST** attend all departmental seminars.

Personal reading. Students are expected to be familiar with scientific developments in biology through regularly scanning journals such as *Nature*, *Science*, *South African Journal of Science*, *New Scientist* and others. Students can also benefit by attending general science seminars on campus and by playing an active role in the students' Zoological Society.

3.2 SCIENTIFIC RESEARCH

3.2.1 Scientific Research Skills

The course includes an introductory module dealing with the philosophy of science and the design and analysis of research projects. Students will conduct a research exercise to explore these topics before embarking on larger research projects.

3.2.2 Research Projects

Students will undertake two research projects that are supervised by different lecturers. **Projects must be (co-)supervised by a lecturer of the Department of Zoology & Entomology.** A list of potential projects is available but students are encouraged to suggest their own projects and find a staff member to supervise it, and the project must be supported by the Programme Coordinator.

Students are also encouraged to choose projects that expose them to two different fields of research and the techniques and literature that go with them. Choosing one laboratory-based and one field-based project may be wise, and time management planning should consider the time of year when the work can be done, and to **field safety**. For security reasons, students are strongly discouraged from doing fieldwork unaccompanied. If you go into the field, ensure that you are accompanied by someone and that you let the Department Secretary know where you are and when you expect to return. Take a fully charged cellphone along whenever possible.

Project Assessment Guidelines

STUDENT CONTRIBUTION <input type="checkbox"/> effort <input type="checkbox"/> enthusiasm <input type="checkbox"/> independence	10
TITLE & ABSTRACT <input type="checkbox"/> Informative <input type="checkbox"/> accurate <input type="checkbox"/> abstract 200-300 words <input type="checkbox"/> with numerical results (where appropriate) <input type="checkbox"/> with major conclusions	5
INTRODUCTION <input type="checkbox"/> Good literature review <input type="checkbox"/> rationale, aims (as hypotheses) <input type="checkbox"/> approach <input type="checkbox"/> clear, succinct writing	15
METHODS <input type="checkbox"/> Complete <input type="checkbox"/> accurate <input type="checkbox"/> study sites <input type="checkbox"/> statistical methods	10
RESULTS <input type="checkbox"/> Properly described <input type="checkbox"/> statistics adequately performed & interpreted <input type="checkbox"/> appropriate figures and tables <input type="checkbox"/> figures and tables clear with adequate legends	20
DISCUSSION <input type="checkbox"/> Comparison with other work <input type="checkbox"/> results adequately explained and significance highlighted <input type="checkbox"/> conclusions	20
REFERENCES <input type="checkbox"/> Suitable coverage <input type="checkbox"/> correctly cited <input type="checkbox"/> bibliography	10
PRESENTATION FOLLOWING INSTRUCTIONS TO AUTHORS <input type="checkbox"/> Appearance <input type="checkbox"/> layout <input type="checkbox"/> lack of typos <input type="checkbox"/> suitable length <input type="checkbox"/> style <input type="checkbox"/> use of grammar	10
TOTAL	100

3.3 **SCIENTIFIC COMMUNICATION SKILLS**

Based on other assignments, students will prepare popular articles, posters, abstracts, short notes and other forms of scientific communication. The following exercises are particularly important.

Project Proposals. Research proposals for both research projects must be written and submitted to the department. Supervisors will assist this process.

Manuscripts. Both projects will be documented in the format of scientific manuscripts ready for submission to *African Entomology*, *African Zoology*, or the *South African Journal of Marine Sciences*, as is appropriate to the particular course. Instructions to authors regarding style and layout are available from the journals' home pages.

Seminars. Students will present five seminars. The first two will be early in the year and will emphasise the experimental design, methods and intended analysis to be used in the two projects. The third seminar will present a polemical theoretical topic and the final two will be presented late in the year and will be full conference presentations of the two projects. Topics for the theoretical seminars will be released in February.

Book Reviews. Students will submit book reviews of their chosen set works.

Academic review. Students are required to submit a review manuscript on their chosen theoretical topic after presenting it as a seminar.

Public Awareness of Science. All Honours students are required to demonstrate once a week in one first-year laboratory class for one semester. A training workshop will be held to expose students to skills that are useful in teaching and communicating scientific knowledge to non-specialists in informal settings. Although demonstrating is an important and integral part of the course, you will be paid for it.

3.4 COURSE MARK BREAKDOWN

2013

	Contact units (weeks)				weight	
	Weeks / task	Weeks / module	% of time	Total marks	Marks for task	% of final mark
GIS course	1			200	5.6	0.6%
Philosophy of Science	1	6	3.3%		5.6	0.6%
Experimental Design & Analysis	4				22.2	2.2%
Short note	0.5				2.8	0.3%
Popular article	0.5				2.8	0.3%
Poster	0.5				2.8	0.3%
Project Proposal 1 Seminar	0.5				2.8	0.3%
Project Proposal 2 Seminar	1	6	3.3%		5.6	0.6%
Theoretical Topic Seminar	1				5.6	0.6%
Theoretical Topic Review Paper	1				5.6	0.6%
Book Review 1	0.5				2.8	0.3%
Book Review 2	0.5				2.8	0.3%
Tutorial 1 – Invasive Organisms	4		2.2%		22.2	2.2%
Tutorial 2 – Molecular Biology	4		2.2%		22.2	2.2%
Tutorial 3	4	24	2.2%		22.2	2.2%
Tutorial 4	4		2.2%		22.2	2.2%
Tutorial 5	4		2.2%		22.2	2.2%
Tutorial 6	4		2.2%		22.2	2.2%
Project 1 Seminar		21	2.5%	200	25	2.5%
Project 1 Document			17.5%		175	17.5%
Project 2 Seminar		21	2.5%	200	25	2.5%
Project 2 Document			17.5%		175	17.5%
Paper 1 - Tutorials 1 / 3 / 5				400	117	11.7%
Paper 2 - unseen					116	11.6%
Paper 3 - Tutorials 2 / 4 / 6					117	11.7%
Oral Examination					50	5.0%

4 Timetables

	Scientific Communication			Research Design and Analysis
4-Feb	Plagiarism (MHV)		09:00 Welcome (PWF)	Philosophy of Science (AJFKC) Philosophy of Science (AJFKC) Philosophy of Science (AJFKC)
5-Feb				
6-Feb				
7-Feb				
8-Feb				
9-Feb			Class field trip	
10-Feb				
11-Feb	Popular Articles		DP - current awareness	GIS (GKMcG) GIS (GKMcG) GIS (GKMcG)
12-Feb				
13-Feb				
14-Feb				
15-Feb				
18-Feb	Library tutorial: 14:00		Demonstrator's Workshop (MHV)	Experimental Design and Analysis (MHV, NBR)
19-Feb	Seminars (NBR)			
20-Feb				
21-Feb	Seminars (NBR)			
22-Feb			Project 1 proposal seminar	
25-Feb	Project Proposals (MHV)			Experimental Design and Analysis (MHV, NBR)
26-Feb				
27-Feb				
28-Feb				
1-Mar			Project proposal 1	
4-Mar	Full-length Papers			Experimental Design and Analysis (MHV, NBR)
5-Mar				
6-Mar				
7-Mar				
8-Mar			Project 2 proposal seminar	
11-Mar	Short Notes (DP)			Experimental Design and Analysis (MHV, NBR)
12-Mar				
13-Mar				
14-Mar				
15-Mar	Book reviews (MHV)		Project proposal 2	

	UG	Week	Deliverable (Fridays)	Current Awareness	AFRICAN VERTEBRATE DIVERSITY		ENTOMOLOGY		MARINE BIOLOGY		ZOOLOGY					
4-Feb	Term 1	1	Karoo field trip	DMP	Scientific Communication (all)		Scientific Communication (all)		Scientific Communication (all)		Scientific Communication (all)					
11-Feb		2				GIS				GIS			GIS			
18-Feb		3	Project 1 proposal seminar			Research Design and Analysis (NRB, MHV, DMP)		Research Design and Analysis (NRB, MHV, DMP)		Research Design and Analysis (NRB, MHV, DMP)		Research Design and Analysis (NRB, MHV, DMP)				
25-Feb		4	Project proposal 1													
4-Mar		5	Project 2 proposal seminar	MHV												
11-Mar		6	Project proposal 2													
18-Mar		7														
25-Mar		8														
1-Apr	Term 2	9	Graduation	NBR	Projects		Projects		Projects		Projects					
8-Apr		10														
15-Apr		11	Book review 1													
22-Apr		12			Invasion Biology (MPH, ANH)	Conservation Biology (DMP)	Invasion Biology (MPH, ANH)	Cultural Biology (MHV)	Invasion Biology (MPH, ANH)	Cultural Biology (MHV)						
29-Apr		13		AET												
6-May		14														
13-May		15														
20-May		16														
27-May	17	Book review 2														
3-Jun	Exams	18		MPH	Avian Biology (AJFKC)	Molecular Biology (AET)	Insects in Sustainable Agroecosystems (MPH, ULPH, SDM)	Molecular Biology (AET)	Trophic Ecology (NBR)	Molecular Biology (AET)	Trophic Ecology (NBR)	Molecular Biology (AET)				
10-Jun		19														
17-Jun		20														
24-Jun	21	Break														
1-Jul	Term 3	22		Conferences	Projects		Projects		Projects		Projects					
8-Jul		23														
15-Jul		24	Theoretical Seminar													
22-Jul		25	Review Article													
29-Jul		26		ANH	African Mammalogy (DMP)	African Vertebrate Ecology (DMP)	Plant- Insect Interactions (JAC, IDP, SAGC)	TBA	Life on the Seabed CDMcQ, ANH	Man and the Sea PWF, CDMcQ, ANH	Plant- Insect Interactions (JAC, IDP, SAGC)	Behavioural Ecology (AJFKC)				
5-Aug		27														
12-Aug		28														
19-Aug		29														
26-Aug	30	1st draft Project 1														
2-Sep		31		AJFKC												
9-Sep	Term 4	32			Projects		Projects		Projects		Projects					
16-Sep		33	Project 1 Seminar													
23-Sep		34	Project 1 Manuscript													
30-Sep		35	1 st draft, Project 2	ULPH												
7-Oct		36														
14-Oct		37	Project 2 Seminar													
21-Oct	38	Project 2 Manuscript														
28-Oct		39	SWOT week													
AFJKC - Adrian Craig; ANH - Alan Hodgson; AET - Alicia Timm; CDM - Christopher McQuaid; DMP - Dan Parker; MHV - Martin Villet; MPH - Martin Hill; NBR - Nicole Richoux; PWF - William Froneman; ULPH - Unathi Heshula																