

BDE 364 Conservation Biology

16 credits, Second semester 2022

Course coordinator: Prof. Sophie von der Heyden

Lecturers:

Dr Nicole Martin (NM)
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Prof. Conrad Matthee (CM)
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Prof. Sophie von der Heyden (SvdH)
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Dr Andrew Ndhlovu (AN)
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Course Assistant:

Mr Jonathan Williams
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Pre-requisites:

- BDE212 or Biomathematics 214
- BDE214

Aims: The aim of this course is to introduce the topic of conservation biology with a focus on the role that science plays in this field.

On completion of this module students should:

- have a thorough understanding of the concept of biodiversity.
- understand how conservation is addressed at the molecular, population, ecosystem and landscape scales.
- understand how resource management interfaces with conservation efforts.
- be able to measure anthropogenic impacts.
- be able to think objectively and critically about conservation issues.

Textbook: Wilson and Primack (2019) *Conservation Biology in sub-Saharan Africa*. OpenBook Publishers (Free electronic version on SUNLearn and via a Google search)

Assessment:

This is a flexible assessment course. There will be NO exam. To pass this course you require a subminimum of 45% average for the tests and a final mark of at least 50%.

The *Final Mark* will be made up as follows:

Class test:	25%
Class discussions:	10%
Spatial planning prac:	10%
Blue carbon prac:	10%
Communicating science:	20%
<u>Final test:</u>	<u>25%</u>
Total.....	100%

Course structure: This module will be offered on campus and presented in person with no simultaneous live streaming. Pracs will take the form of in person and self-study sessions.

Lecture schedule:

Students are expected to attend all lectures. Lectures will take place in room 1030 Natural Science Building. Lectures are held on Mondays (10h00-10h50), Tuesdays (08h00-08h50) and Fridays (11h00-11h45).

Date	Time	Topic	Lecturer
18 July	10:00	Introduction to the course What is conservation biology?	NM
19 July	08h00	Horizon scan: emerging global conservation issues	SvdH
22 July	11h00	Patterns of biodiversity and utility of the natural world	CM
25 July	10h00	Biodiversity in major world ecosystems	CM
26 July	08h00	Biodiversity loss, extinction risk & threat status	CM
29 July	11h00	Allee effect	CM
01 Aug	10h00	The role of disturbance	NM
02 Aug	08h00	Habitat loss	NM
05 Aug	11h00	Ecosystem functioning	NM
08 Aug	10h00	Ecosystem services	NM
09 Aug	National Women's Day		
12 Aug	11h00	Domestic legal framework	NM
15 Aug	10h00	International legal framework	NM
16 Aug	08h00	Self-study	
19 Aug	11h00	Systematic Spatial /Conservation planning	SvdH
22 Aug	10h00	Considering terrestrial & marine perspectives in SCP	SvdH
23 Aug	08h00	Planning outside national boundaries: pelagic ecosystems	SvdH
26 Aug	11h00	Important Bird Areas: assessing PA efficacy under CC	SvdH
29 Aug	10h00	The importance of genetic diversity	SvdH
30 Aug	08h00	ESU, MU & adaptive capacity: intra-specific variation	SvdH

Date	Time	Topic	Lecturer
02 Sept	11h00	Anthropocene impacts: a global genetic perspective	SvdH
Recess 05-09 Sept			
12 Sept	10h00	Anthropocene impacts: regional perspectives	SvdH
13 Sept	8h00	Phylogenetic diversity (PD)	SvdH
16 Sept	11h00	Using PD for species conservation	SvdH
19 Sept	10h00	Integrating genetics into spatial planning	SvdH
20 Sept	8h00	Revision session	SvdH
23 Sept	11h00	Guest lecture: managing African demersal fisheries with genomics	SvdH
26 Sept	10h00	Over exploitation	NM
27 Sept	8h00	Decision making	NM
30 Sept	11h00	Resource economics	NM
03 Oct	10h00	Restoration Ecology	AN
04 Oct	8h00	Restoration Ecology: importance of blue carbon systems	AN
07 Oct	11h00	Status of biodiversity in South Africa	NM
10 Oct	10h00	Societies & natural resources	NM
11 Oct	8h00	Measuring impacts I	NM
14 Oct	11h00	Measuring impacts II	NM
17 Oct	10h00	Biodiversity thresholds	NM
18 Oct	8h00	Technology & conservation	NM
21 Oct	11h00	Challenges facing conservation	NM

Practical programme: The practical component of this course will take the form of in person and self-study sessions. Pracs are compulsory for all students and are scheduled for Wednesday afternoons 14h00-17h00 in room 3002 in the Merensky building.

Date	Time	Topic	Venue	Lecturer
20 July	14h00	Introduction to controversies discussions	Rm 3002, Merensky	NM
27 July	14h00	Introduction to the communication assignment	Rm 3002, Merensky	NM
03 Aug	14h00	Controversies in conservation discussions	Rm 3002, Merensky	NM
10 Aug	14h00	Controversies in conservation discussions	Rm 3002, Merensky	NM
17 Aug	14h00	Work on communication assignment	N/A	
24 Aug	14h00	Class Test	Rm 3002, Merensky	NM
31 Aug	14h00	Prep for students who have not done BDE354	Rm 3002, Merensky	SvdH
Recess 05 – 09 Sept				
14 Sept	14h00	Identifying features for spatial planning	NARGA	SvdH
21 Sept	14h00	Work on communication assignment	N/A	
28 Sept	14h00	Work on communication assignment	N/A	
05 Oct	14h00	Blue carbon	Rm 3002, Merensky	AN
12 Oct	14h00	Work on blue carbon assignment	N/A	
19 Oct	14h00	Revision	Rm 3002, Merensky	NM

Important dates:

Due date	Deliverable	Venue
3 Aug	Controversies in Conservation Session 1	Rm 3002, Merensky
1 Sept	Controversies in Conservation Session 2	Rm 3002, Merensky
24 Aug	Class Test	Rm 1030, Natural Science Building
14 Sept	Spatial planning	SunLearn (submit by 6pm after prac)
12 Oct	Communication assignment	SunLearn
21 Oct	Blue carbon	SunLearn
1 Nov	Final Test	TBC

Important information:

Use of university emails and SUNLearn Settings:

All communication for this course will be posted via SUNLearn or directly to your official university email address. You will need to use a link sent to this email address to access the online meetings via Teams. If you routinely use another email address, please be sure to auto-forward your university email to that address. Please note that we will routinely be communicating through SUNLearn. Should you chose to alter your settings so that you don't get messages as soon as they are sent, you may miss urgent messages.

Missing tests and deadlines:

In instances where a test or deadline is missed a valid doctor's certificate is required within one week of the test or hand-in date. The certificate must be emailed to Mr Williams as well as Mrs Hutton (email: janette@sun.ac.za). We reserve the right to request a hardcopy of the certificate. Failure to submit a note will result in a mark of zero. Should you be required to self-quarantine please let the lecturer know asap. This enables us to provide the support that you need to keep on top of your studies.

Late submissions:

Assignments received after the deadline will lose 5% per day and will not be marked if submitted later than seven days.

Submission deadlines:

All assessments have been carefully scheduled to avoid clashes with other third year BDE courses. As such no deadlines will be moved.

Subminimum:

To pass this course you require a subminimum of 45% average for the tests and a final mark of at least 50%. No exceptions will be made.

Language implementation for this module:

The Department of Botany and Zoology recognises English as the international academic language and a medium through which science can be communicated. It is thus our endeavour to ensure that each and every one of our students are proficient to communicate through the medium of English. We will, however, accommodate our Afrikaans students to the best of our ability.

The following language option will be implemented in this BDE module: Lectures will be offered in English only

The materials for learning will be made available as follows:

- All compulsory reading material will be provided in English. Compulsory reading material (excluding published material) will also be provided in Afrikaans unless it is not reasonably practicable to do so.
- Module frameworks/study guides will be available in Afrikaans and English.
- Question papers for tests, examinations and other summative assessments will be available in Afrikaans and English. Students may answer all assessments and submit all written work in either Afrikaans or English.