



Stellenbosch

UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

SCIENCE

EYENZULULWAZI NGEZENDALO

NATUURWETENSKAPPE

BDE (Biodiversity & Ecology) 334 **Global Change Biology** **2023**

BDE (Biodiversiteit & Ekologie) 334 **Globale Veranderingsbiologie** **2023**

Short description of the module

This module covers a wide variety of topics concerned with natural and anthropogenic climate change (CC) scenarios and other drivers of global change in both the past and future. It aims to equip students with an understanding of global CC, other drivers of anthropogenically driven changes, the impacts of change on biotic and abiotic systems and the consequences of CC for terrestrial and marine systems on earth.

Kort beskrywing van die module

Hierdie module dek 'n wye verskeidenheid onderwerpe wat handel oor natuurlike en antropogene klimaatsverandering (KV) scenario's en ander drywers van globale verandering in beide die verlede en die toekoms. Dit mik om studente toe te rus met 'n begrip van globale KV, ander drywers van antropogeen aangedrewe verandering, die impakte van verandering op biotiese en abiotiese sisteme en die gevolge van KV vir terrestriële en mariene sisteme op aarde.

Module summary

Name	BDE334
Duration	1st semester
Academic commitment*	16 credits = 6 contact hours per week
Scheduled learning opportunities	3 lectures per week 1 practical per week
Assessment option	Option 1
Language option	Option 3
Mode of offering	Face-2-Face
Corequisites / Prerequisites / Pass prerequisites**	Pass four of the following modules: BDE 212, 214, 224, 244, 254, 264

**Notional hours are the learning time that it would take an average learner to meet the outcomes of the module.*

***The onus is on the students to ensure that they meet the prerequisites of the module.*

Module-oorsig

Naam	BDE 334
Duur	1 ^{ste} semester
Akademiese verbintenis*	16 krediete 6 kontakure per week
Geskeduleerde leergeleenthede	3 lesings per week 1 prakties per week
Assesseringsopsie	Opsie 1
Taalopsie	Opsie 3
Modus van aanbieding	In persoon
Newevereistes / Voorvereistes / Slaagvoorvereistes**	Slaag vier van die volgende modules: BDE 212, 214, 224, 244, 254, 264

**Veronderstelde leerure is die tyd wat die gemiddelde leerder aan die module sal moet spandeer om aan die uitkomst van die module te voldoen.*

***Die onus rus op die studente om te verseker dat hulle aan die voorvereistes van die module voldoen.*

Outcomes

On completion of this module you should be familiar with the following concepts:

- Assess and discuss historical and contemporary evidence for global change
- Understand the main drivers of global change and climate change
- Understand how large-scale analyses draw together data from different temporal and spatial scales and at different levels of biological organisation

Uitkomst

Na voltooiing van hierdie module behoort jy bekend te wees met die volgende konsepte:

- Beoordeel en bespreek historiese en kontemporêre bewyse vir globale verandering
- Begryp die hoof drywers van globale verandering en klimaatsverandering
- Begryp hoe grootskaalse analises data uit verskillende tyds- en ruimtelike skale saamtrek op verskillende vlakke van biologiese organisasie

<p>Scheduled learning opportunities The official timetable indicating all scheduled learning opportunities and their allocated venues can be accessed via My.SUN.</p> <p>Lectures All lectures will be presented as live Powerpoint presentations, and these slides (non-narrated) will be made available on SunLearn for study purposes.</p> <p>Practicals All practical sessions and discussion/guest lectures are compulsory and may not be missed without excuse.</p>	<p>Geskeduleerde leergeleenthede Die amptelike rooster wat al die geskeduleerde leergeleenthede en die toegewysde venues aandui, is beskikbaar by My.SUN.</p> <p>Lesings Alle lesings sal as in persoon Powerpoint voordragte aangebied word, en hierdie notas (sonder stemopnames) sal op SunLearn beskikbaar gestel word vir studie doeleindes.</p> <p>Praktika Alle praktiese sessies en besprekings / gaslesings is verpligtend en mag nie gemis word sonder 'n verskoning nie.</p>
<p>Study material This module does not make use of a set textbook, as the field of global change pushes forward rapidly and thus cannot be summarised in one book. We make extensive use of reports of the Intergovernmental Panel on Climate Change (IPCC, 2007 and onwards, available online at www.ipcc.ch) and selected journal articles; students will be advised on these, and all articles are made available on the SunLearn platform (http://learn.sun.ac.za). It is expected that students will use the resources provided to them</p>	<p>Studiemateriaal Hierdie module maak nie gebruik van 'n voorgeskrewe handboek nie, aangesien die veld van globale veranderinge vinnig vorder en dus nie in een boek opgesom kan word nie. Ons maak baie gebruik van verslae van die Inter-regeringspaneel oor Klimaatsverandering (IPCC, 2007 en 2015, aanlyn beskikbaar by www.ipcc.ch) en geselekteerde joernaal artikels; studente sal ingelig word oor hierdie artikels, en alle artikels sal op die SunLearn (http://learn.sun.ac.za) platform beskikbaar gestel word. Daar word van studente verwag om die bronne wat aan hulle beskikbaar gestel word te gebruik</p>
<p>Lecturers Prof. Sophie Von der Heyden (SvdH) - course coordinator; svdh@sun.ac.za, Rm 3043, Nat Sci building Prof. Susana Clusella-Trullas (SCT) - sct333@sun.ac.za - Rm 3071 Dr Nasreen Peer (NP) - npeer@sun.ac.za, Rm 2048 Prof. Guy Midgley (GM) - gfmidgley@sun.ac.za, Rm 2039E</p> <p>Course assistant Ms. Fawzia Gordon (FG) - fg1@sun.ac.za, Room 3056, NatSci Building</p>	<p>Dosente Prof. Sophie Von der Heyden (SvdH) - kursus koördineerder; svdh@sun.ac.za, Kamer 3043, NatWet gebou Prof. Susana Clusella-Trullas (SCT) - sct333@sun.ac.za - Kamer 3071 Dr Nasreen Peer (NP) - npeer@sun.ac.za, Kamer 2048 Prof. Guy Midgley (GM) - gfmidgley@sun.ac.za, Kamer 2039E</p> <p>Kursus assistent Me. Fawzia Gordon (FG) - fg1@sun.ac.za, Kamer 3056, NatWet gebou</p>

Assessment

The dates for all centrally scheduled assessments are published on [My.SUN](#).

This module follows assessment option 1. Please see the [Faculty of Science's assessment guidelines](#) for more details.

In this module you will write **ONE theory (semester) test**, hand in **FOUR practical reports**, might receive spot tests (or peer assessments) and write **ONE exam paper**. The final mark is the sum of your semester mark (40%) and the mark obtained in the June exam (60%). Your semester mark comprises the theory test (40%) and the practical reports (60%; there are four reports, each counts 15% towards the semester mark). To qualify for the exam you must have obtained at least 40% for the semester mark. An exam mark of at least 40% is required to obtain a final mark of 50%. To pass the module you must obtain a final mark of 50%.

SEMESTER TEST:

29 March 2023, Wednesday @ 14h00

NB* There is no written second opportunity for this test. You will be expected to do an oral test.

PRACTICAL REPORTS :

SVDH: 14 March 2023

SCT: 11 April 2023

NP:

GFM:

FINAL EXAMS

Exam 1: 26 May 2023, Friday, 09h00 OR / AND

Exam 2: 17 June 2023, Saturday, 09h00

Please see the assessments and promotion chapter in the [SU Calendar Part 1 \(General\)](#) for institutional rules regarding assessments.

Assesserings

Die datums van alle sentraal geskeduleerde assesserings word op [My.SUN](#) gepubliseer.

Hierdie module volg assesseringsopsie 1. Raadpleeg die [Fakulteit Natuurwetenskappe se assesseringsriglyne](#) vir meer besonderhede.

In hierdie module sal jy **EEN teorie (semester) toets** skryf, VIER praktiese verslae inhandig, verskeie blitstoetse skryf (of deur eweknieë geassesseer word en EEN eksamenvraestel skryf. Die finale punt is die som van jou semesterpunt (40%) en die punt verwerf in die Junie eksamen (60%). Jou semester punt sal bestaan uit punte van die teorie toets (40%) en die praktiese verslae (60%; daar is vier verslae, elk tel 15% by tot die semesterpunt). Om vir die eksamen te kwalifiseer moet jy 'n semesterpunt van ten minste 40% behaal. 'n Eksamenpunt van ten minste 40% word verlang om 'n finale punt van 50% te behaal. Om die module te slaag moet jy 'n finale punt van 50% behaal.

SEMESTER TOETS:

29 Maart 2023, Woensdag @ 14h00

NB* Daar is geen tweede geleentheid vir die toets. U sal 'n mondeling toets afle.

PRAKTIESE VERSLAE:

SVDH: 14 Maart 2023

SCT: 11 April 2023

NP:

GFM:

FINALE EKSAMENS

Eksamen 1: 26 Mei 2023, Vrydag, 09h00 OF / EN

Eksamen 2: 17 Junie 2023, Saterdag, 09h00

Raadpleeg die hoofstuk oor assessering en promovering in [Deel 1 \(Algemeen\) van die US Jaarboek](#) vir institusionele reëls oor assesserings.

Calculation of final marks

A1 Class test:	16%
Practical Reports	24% (4x6%)
A2 Examtest	60%

Final mark	100%

Berekening van finale punte

A1 Klastoets:	16%
Praktiese Verslae	24%
A2 eksamentoets	60%

Finale punt	100%

Absenteeism (Missed opportunities)

Please see the section 11 of the SU Calendar Part 1 (General) for the institutional rules regarding absence from classes and or tests. Take note that for any absence from the university *for more than one* teaching, learning or assessment opportunity, for whatever reason, students need to apply for leave of absence from the Registrar's office.

All practical sessions and discussion/guest lectures are compulsory and may not be missed without excuse. In instances where a test or deadline is missed, a valid original doctor certificate is required within five working days after the test/deadline. In special circumstances (e.g. participation in provincial or national sporting events) a letter is required from the sporting body. In these instances, granting of permission to miss tests or deadlines is at the discretion of the course coordinator and is not automatic. If you are unable to make scheduled lectures, practicals or any of the deadlines you should contact Prof Sophie von der Heyden in advance to make alternative arrangements.

Documentation must be handed in to Ms Fawzia Gordon and a sick test (oral) will normally be held one week (five working days) after the original test date. It is the student's responsibility to determine the time and place of this test. No time extensions will be allowed for handing in practical reports and reports handed in late will not be marked (or a marks penalty will be applied).

Afwesigheid (die misloop van 'n leergeleentheid)

Raadpleeg asseblief afdeling 11 in Deel 1 (Algemeen) van die US Jaarboek vir die institusionele reëls met betrekking tot afwesigheid van klasse en of toetse.

Alle praktiese sessies en bespreking/gaslesings is verpligtend en mag nie sonder verskoning gemis word nie. In gevalle waar 'n toets of sperdatum gemis word, word 'n geldige oorspronklike doktersertifikaat binne vyf werksdae na die toets/ sperdatum vereis. In spesiale omstandighede (bv. deelname aan provinsiale of nasionale sportbyeenkomste) word 'n brief van die sportliggaam vereis. In hierdie gevalle is die toekenning van toestemming om toetse of sperdatums mis te loop na goeë dunde van die kursuskoördineerder en is dit nie outomaties nie. Indien u nie geskeduleerde lesings, praktiese of enige van die sperdatums kan maak nie, moet u prof Sophie von der Heyden vooraf kontak om alternatiewe reëlins te tref.

Dokumentasie moet by me Fawzia Gordon ingehandig word. 'n Siekte toets ('n mondeling) sal normaalweg een week (vyf werksdae) na die oorspronklike toetsdatum gehou word. Dit is die student se verantwoordelikheid om die tyd en plek van hierdie toets te bepaal. Geen tyduitbreidings sal toegelaat word om praktiese verslae in te handig nie en verslae wat laat ingehandig word, sal nie gemerk word nie (of 'n punteboete sal toegepas word).

<p>Communication</p> <p>The announcement forum on the SUNLearn module page is the only official platform that will be used to make announcements relevant to this module. Please check this regularly.</p> <p>For communication with individual students, lecturers, support staff and peer-to-peer facilitators will only use students' official SUN email addresses.</p> <p>Students are also requested to use their official SUN email addresses for all academic related communication to: svdh@sun.ac.za / fg1@sun.ac.za</p>	<p>Kommunikasie</p> <p>Die aankondigingsforum op die SUNLearn moduleblad is die enigste amptelike platform wat gebruik sal word om aankondigings, wat relevant is vir hierdie module, te maak. Kontroleer dit asseblief gereeld.</p> <p>Vir kommunikasie met individuele studente, sal dosente, steunpersoneel en eweknie-fasiliteerders slegs studente se amptelike SUN-e-posadresse gebruik.</p> <p>Studente word ook versoek om hul amptelike SUN-e-posadresse vir alle akademiese verwante kommunikasie te gebruik: svdh@sun.ac.za / fg1@sun.ac.za</p>
<p>Addressing challenges</p> <p>For any complaints, the first port of call is the class representative or the lecturer. If not satisfactorily resolved, it can be escalated to the Head of Department or Coordinator: Academic and Student Affairs.</p>	<p>Hantering van uitdagings</p> <p>Vir enige klagtes, is die klasvertegenwoordiger of dosent die eerste plek om hulp te soek. Indien die probleem nie bevredigend opgelos word nie, kan dit na die Departementshoof of Koördineerder: Akademiese- en Studentesake verwys word.</p>
<p>Academic Misconduct</p> <p>Academic misconduct includes plagiarism, collusion, cheating and fabrication as stipulated in the Disciplinary code for students of Stellenbosch University.</p> <p>Plagiarism is regarded as a serious offence. More serious cases are handled as set out in the Stellenbosch University procedure for the investigation and management of allegations of plagiarism document.</p> <p>Less serious cases are dealt with by the module coordinator and respective department as set out by the procedures of the faculty.</p>	<p>Akademiese Wangedrag</p> <p>Akademiese wangedrag sluit plagiaat samespanning, bedrog en versinsel in, soos bepaal in die Disiplinêre kode vir studente van die Universiteit Stellenbosch.</p> <p>Plagiaat word as 'n ernstige oortreding beskou. Ernstiger gevalle word hanteer soos uiteengesit in die Universiteit Stellenbosch se dokument oor die prosedure vir die ondersoek en bestuur van bewerings van plagiaat. Minder ernstige gevalle word deur die modulekoördineerder en betrokke departement hanteer soos uiteengesit in die fakulteitsprosedures.</p>

Lecture programme:

Lecture times:

- Mondays: 10h00 -10h45
- Tuesdays: 08h00 – 08h45
- Fridays: 11h00 – 11h45

Venue: Natural Science Building, Room 1030, Annex lecture hall .

Week #/ Lecture #	Date	Topic	Lecturer
Week 1/ 1	13/ 02	Course outline & Welcome to the Anthropocene!	SvdH 1
Week 1/ 2	14/ 02	The future of the planet – what do models tell us?	Svdh 2
Week 1/ 3	17/ 02	Broad patterns and impacts of CC on terrestrial spp	SvdH 3
Week 2/ 4	20/ 02	Broad patterns and impacts of CC on marine spp	SvdH 4
Week 2/ 5	21/ 02	Scaling from individuals to communities – do species respond in similar ways?	SvdH 5
Week 2/ 6	24/ 02	Impacts of species range shifts	SvdH 6
Week 3/ 7	27/ 02	Can functional traits explain range shifts in species?	SvdH 7
Week 3/ 8	28/ 02	Ocean acidification and sea level rise	SvdH 8
Week 3/ 9	03/ 03	Over-exploitation and CC as a driver of population and spp extinctions	SvdH 9
Week 4/ 10	06/ 03	Biotic resistance and resilience to changing climates	SvdH 10
Week 4/ 11	07/ 03	Revision / wriggle room	SvdH 11

Week 4/ 12	10/ 03	The multidimensionality of climate change: let's think beyond air temperature	SCT 1
Week 5/ 13	13/ 03	Extreme climatic events	SCT 2
Week 5/ 14	14/ 03	Studying the environment at the scale of the organism	SCT 3
Week 5/ 15	17/ 03	Why do we need mechanistic niche models?	SCT 4
Week 6/ 16	20/ 03	Heat budgets (terrestrial species)	SCT 5
Week 6	21/ 03	No Class, Public Holiday	
Week 6/ 17	24/ 03	Water budgets (terrestrial species)	SCT 6
Week 7/ 18	27/ 03	Combining fitness components to predict population demography and extinction risk (1)	SCT 7
Week 7/ 19	28/ 03	Combining fitness components to predict population demography and extinction risk (2)	SCT 8
Week 7/ 20	31/ 03	The impact of global change on humans	NP 1
		RECESS : 01 /04 – 10/04	
Week 8/ 21	10/ 04	No Class, Family Day	
Week 8/ 22	11/ 04	Ecosystem services: regulating the effects of global change	NP 2
Week 8/ 23	14/ 04	Humans as drivers of global change Follow Monday Roster	NP 3
Week 9/ 24	17/ 04	Mitigation and adaptation	NP 4
Week 9/ 25	18/ 04	Global change and indigenous knowledge	NP 5
Week 9/ 26	21/ 04	Advancing the Blue Economy in a global change context	NP 6

Week 10/ 26	24/ 04	The importance of scientific objectivity / Research impact and relevance	NP 7
Week 10/ 27	25/ 04	Quiz	NP 8
Week 10/ 28	28/ 04	A biome-level understanding of climate change impacts	GM 1
Week 11	01/ 05	<i>No Class, Public Holiday</i>	
Week 11/ 29	02/ 05	Plant functional types, plant traits, and biomes I	GM 2
Week 11/ 30	05/ 05	Plant functional types, plant traits, and biomes II	GM 3
Week 12/ 31	08/ 05	Disturbance versus climatic control of biomes	GM 4
Week 12/ 32	09/ 05	How does atmospheric CO ₂ control biomes?	GM 5
Week 12/ 33	12/ 05	Past, present and future of disturbance and CO ₂ control of biomes	GM 6
Week 13/ 34	15/ 05	Understanding and predicting the global carbon cycle I	GM 7
Week 13/ 35	16/ 05	Understanding and predicting the global carbon cycle II	GM 8
Week 13/ 36	19/ 05	How you can use this course in different career paths	GM 9

Practical programme: This module consists of 12 practical contact sessions – one of these is designated for the semester test. Practicals are always in person and will be held every **Wednesday from 14:00 – 17:00** in Lab 2025, or in NARGA B (Rm 2087, Admin A) or in the field as indicated below.:

Prac	Date	Topic	Lecturer
1	15/02	Modelling future climates and an overview of the IPC	SvdH (NARGA)
2	22/02	Species Distribution Models	SvdH / KW (NARGA B)
3	01/03	Climate modelling prac	SvdH / KW (NARGA B)
4	08/03	Choosing a study organism: from simple to complex life cycles	SCT (2025)
5	15/03	Field prac (weather and microclimate data collection)	SCT (Field)
6	22/03	Modelling activity restriction of your study organism	SCT (NARGA B)
7	29/03	SEMESTER TEST	SvdH & SCT (Lab 2025)
	05/04	NO PRAC: RECESS	
8	12/04	The 'Community Voice' Method	NP (NARGA B)
9	19/04	GDP and environmental performance	NP (NARGA B)
	26/04	How to beat climate change	GM (NARGA B)
10	04/05	Nature based solutions – do they work?	GM (NARGA B)
11	11/05	Tutorial to support hand-in work	GM (NARGA B)
12	18/05	NO PRAC	

Lesingsprogram:

Lesingtye:

- Maandag: 10h00 – 10h45
- Dinsdag: 08h00 – 08h45)
- Vrydag: 11h00 – 11h45

Lokaal: Natuurwetenskappe gebou, Kamer 1030, Anneks lesingsaal.

Week #/ Lesing #	Datum	Onderwerp	Dose nt
Week 1/ 1	13/ 02	Kursusuiteensetting & Inleiding tot die Anthroposeen	SvdH 1
Week 1/ 2	14/ 02	Toekoms van die planeet – wat vertel modelle vir ons?	Svdh 2
Week 1/ 3	17/ 02	Breë patrone en impakte van KV op terrestriële lewe	SvdH 3
Week 2/ 4	20/ 02	Impak van KV op mariene spesies	SvdH 4
Week 2/ 5	21/ 02	Skalering van organisme tot gemeenskappe?	SvdH 5
Week 2/ 6	24/ 02	Impak van spesie reekverskuiwings	SvdH 6
Week 3/ 7	27/ 02	Kan funksionele eienskappe reekverskuiwings in spesies verduidelik word?	SvdH 7
Week 3/ 8	28/ 02	KV en oseaan versuring	SvdH 8
Week 3/ 9	03/ 03	KV en uitsterwing	SvdH 9
Week 4/ 10	06/ 03	Biotiese weerstand en veerkragtigheid tot n veranderende klimaat	SvdH 10
Week 4/ 11	07/ 03	Hersiening/ “wriggle” kamers	SvdH 11
Week 4/ 12	10/ 03	Die multidimensionaliteit van klimaatsverandering: kom ons dink verder as lugtemperatuur	SCT 1

Week 5/ 13	13/ 03	Uiterste klimaatsgebeurtenisse	SCT 2
Week 5/ 14	14/ 03	Bestudeer die omgewing op die skaal van die organisme	SCT 3
Week 5/ 15	17/ 03	Waarom het ons meganistiese nismodelle nodig ?	SCT 4
Week 6/16	20/ 03	Hittebegrotings (aardse spesies)	SCT 5
Week 6/ 17	21/ 03	<i>Geen Klas, Publieke Vakansiedag</i>	
Week 6/ 17	24/ 03	Waterbegrotings (aardse spesies)	SCT 6
Week 7/ 18	27/ 03	Kombinasie van fiksheidskomponente om bevolkingsdemografie en uitsterwingsrisiko te voorspel 1	SCT 7
Week 7/ 19	28/ 03	Kombinasie van fiksheidskomponente om bevolkingsdemografie en uitsterwingsrisiko te voorspel 2)	SCT 8
Week 7/ 20	31/ 03	Die impak van globale verandering op mense	NP 1
VAKANSIE : 01 /04 – 10/04			
Week 8/ 21	10/ 04	<i>Geen Klas , Gesinsdag</i>	
Week 8/ 21	11/ 04	Ekosisteedienste: regulering van die gevolge van globale verandering	NP 2
Week 8/ 22	14/ 04	Mense as drywers van globale verandering Volg Maandag rooster	NP 3
Week 9/ 23	17/ 04	Versagting en aanpassing	NP 4
Week 9/ 24	18/ 04	Globale verandering en inheemse kennis	NP 5

Week 9/ 25	21/ 04	Bevordering van die Blou Ekonomie in 'n globale veranderingskonteks	NP 6
Week 10/ 26	24/ 04	Die belangrikheid van wetenskaplike objektiwiteit / navorsingsimpak en relevansie	NP 7
Week 10/ 27	25/ 04	“Quiz”	NP 8
Week 10/ 28	28/ 04	'n Biome-vlak begrip van klimaatsverandering impakte	GM 1
Week 11	01/ 05	<i>Geen klas, Openbare Vakansiedag</i>	
Week 11/ 29	02/ 05	Plant funksionele tipes, plant eienskappe, en biome 1	GM 2
Week 11/ 30	05/ 05	Plant funksionele tipes, plant eienskappe, en biome 2	GM 3
Week 12/ 31	08/ 05	Versteuring teenoor klimaatbeheer van biome	GM 4
Week 12/ 32	09/ 05	Hoe beheer atmosferiese CO2 biome?	GM 5
Week 12/ 33	12/ 05	Verlede, hede en toekoms van versteuring en CO2 beheer van biome	GM 6
Week 13/ 34	15/ 05	Verstaan en voorspel die globale koolstofsiklus 1	GM 7
Week 13/ 35	16/ 05	Verstaan en voorspel die globale koolstofsiklus 2	GM 8
Week 13/ 36	19/ 05	Hoe u hierdie kursus op verskillende loopbaanpaaie kan gebruik	GM 9

Praktiese program: Hiedie module bevat 12 praktiese kontakssessies – een waarvan toegewys is aan die semestertoets. Praktika sal elke Woensdag van 14:00 – 17:00 in Lab 2025 (L), in NARGA B (Room 2087, Admin A) (N) of in die veld (V) aangebied word, soos hieronder aangedui

Prac	Date	Topic	Lecturer
1	15/02	Modellering vir toekomstige klimaat en IPC oorsig	SvdH (NARGA)
2	22/02	Spesies verspreiding modelle	SvdH / KW (NARGA)
3	01/03	Klimaat modellering	SvdH / KW (NARGA)
4	08/03	Keuse van 'n studie organisme: van eenvoudige tot komplekse lewensiklusse	SCT (2025)
5	15/03	Veldprakties: Weer en mikroklimaat data insameling	SCT (Veld)
6	22/03	Modellering aktiwiteit beperking van jou studie organisme	SCT (NARGA)
7	29/03	SEMESTER TOETS	SvdH & SCT
	05/04	GEEN PRAKTIES – VAKANSIE	
8	12/04	Die ‘Community Voice’ Metode	NP (NARGA)
9	19/04	BBP en omgewingsprestasie	NP (NARGA)
10	26/04	Hoe om klimaatsverandering te hanteer	GM (NARGA)
11	04/05	Natuurgebaseerde oplossings - werk dit	GM (NARGA)
12	11/05	Tutorial	GM (NARGA)
13	18/05	GEEN PRAKTIES	