

	1	2	3	4	5	6	7	8	9	10	11
IEKM 1	Module 1: Cells a Outcomes: BIO12 Content focus: Ce examine the struc efficient provision biochemical proc of microbiology a predictions and s Working Scientifi In this module, st relationships rela Scientifically skills Inquiry questions Cell Structure: Wi Cell Function: Ho Working Scientifi Information, Ana Skills: understand visualisation, mod Assessment: Dep	as the Basis of Life 1-1; BIO11-2; BIO11- ells are the basis of cture and function in and removal of m esses through the solving problems of ically: cudents focus on ca ited to cell structure is throughout the c s: hat distinguishes c w do cells coordin. ically Skills: Questi lysing Data and Inf ding of HSC key ver delling, critical thir oth Study week 10	1-3; BIO11-4; BIO1 f life. They coordin of organisms at bo naterials to and fro application of the f ccientists use in this f a multidisciplinary onducting investiga re and function. Str ourse. one cell from anoth ate activities withir oning and Predicti formation, Problem rbs, answering HSC sking, ICT skills Term 1	1-5; BIO11-6; BIO11 ate activities to for oth the cellular and om all cells in organi Working Scientifica s field. These tools of y nature. ations to collect, pro- udents are provided her? In their internal envi ng, Planning, and co of Solving, Communi S style questions, m	1-7; BIO11-8 m colonial and mul tissue levels in ord isms. They are intro Illy skills processes. will be used throug ocess and analyse of d with opportunitie ironment and the e onducting investiga icating ultiple choice, shor	Iticellular organism ler to describe how oduced to and inve Students are intro shout the course to data and identify tr es to engage with a external environme ations, Processing D t answer, long resp	s. Students they facilitate the stigate duced to the study assist in making ends, patterns and II Working nt? Data and bonse,	Module 2: Organ Outcomes: BIO1 BIO11-7; BIO11-7 Content Focus: I interdependent - the organism to internal and exter between these t requirements. N developed over f disciplines. The i maintaining heal agriculture and e Working Scientif In this module, s data and informs solve problems, living things. Stu all Working Scient Inquiry question Organisation of O organism? Nutrient and Gas gas requirement Transport: How as it moves arou Working Scientif Data and Inform Solving, Commun Skills: understan multiple choice, scientific termine	nisation of Living T 1-1; BIO11-2; BIO1 9 Multicellular organ transport systems - exchange nutrients ransport systems a lodels of transport time, based on evid nterrelatedness of lth and in solving p ecology. fically: tudents focus on c ation to identify tra and communicate dents are provided ntifically skills throu ss Requirements: W ss between autotro does the compositi nd an organism? fically Skills: Quest ation, Analysing Da nicating uding of HSC key ve short answer, long ology, writing scier	hings 1-3; BIO11-4; BIO11 isms typically consist that range in comple- s, gases and wastes S. Students examine- ind compare nutrier systems and structurer dence gathered from these transport sys- roblems related to se collecting, processing ends, patterns and r ideas about the org with opportunities ughout the course. arranged in a multi- hat is the difference phs and heterotrop ion of the transport ioning and Predictir ata and Information, rbs, answering HSC response, visualisation tific reports Depth Study 35%	<i>I-5; BIO11-6;</i> t of a number of exity and allow between the the relationship at and gas ures have been in a variety of tems is critical in sustainability in g and analysing elationships; anisation of to engage with cellular e in nutrient and hs? medium change og, Processing , Problem questions, tion, ICT skills,

1	2	3	4	5	6	7	8	9	10
Module 2: Organi	isation of Living Th	ings			Module 3: Biolog	ical Diversity			
Outcomes: BIO11	-1; BIO11-2; BIO11	-3; BIO11-4; BIO11-	-5; BIO11-6; BIO11-	7; BIO11-9	Outcomes: BIO11	1-1; BIO11-2; BIO11-	-3; BIO11-4; BIO11-	5; BIO11-6; BIO11-	7; BIO11-10
Content Focus: M	Iulticellular organis	ms typically consist	of a number of int	erdependent	Content Focus: B	iodiversity is import	ant to balance the	Earth's ecosystems	. Biodiversity can be affected
transport systems	that range in com	plexity and allow th	ne organism to exch	nange nutrients,	slowly or quickly	over time by natura	I selective pressure	es. Human impact c	an also affect biodiversity over a
gases and wastes	between the inter	nal and external en	vironments. Studer	nts examine the	shorter time peri	od. In this module, s	students learn abou	ut the Theory of Eve	olution by Natural selection and
relationship betw	een these transpor	rt systems and com	pare nutrient and g	as requirements.	the effect of vario	ous selective pressu	res. Monitoring bio	diversity is key to b	peing able to predict future
Models of transpo	ort systems and str	uctures have been	developed over tim	ne, based on	change. Monitori	ng, including the me	onitoring of abiotic	factors in the envir	onment, enables ecologists to
evidence gathere	d from a variety of	disciplines. The inte	errelatedness of the	ese transport	design strategies	to reduce the effect	ts of adverse biolog	gical change. Stude	nts investigate adaptations of
systems is critical	in maintaining hea	lth and in solving p	roblems related to	sustainability in	organisms that in	crease the organisn	n's ability to survive	e in their environm	ent.
agriculture and ed	cology.				Working Scientifi	ically:			
Working Scientifi	cally:				In this module, st	udents focus on: de	signing appropriate	e investigations; co	llecting and processing data to
In this module, st	udents focus on co	llecting, processing	and analysing data	and information	develop question	s to test hypothese	s using appropriate	media; communic	ating their understanding.
to: identify trends	s, patterns and rela	tionships; solve pro	blems, and commu	unicate ideas	Students are prov	vided with opportur	ities to engage wit	h all Working Scien	tifically skills throughout the
about the organis	ation of living thing	gs. Students are pro	ovided with opportu	unities to engage	course.				
with all Working S	scientifically skills t	hroughout the cour	se.		Inquiry questions	S:			
Inquiry questions		arranged in a multi	allular arganism?		diversity and abu	nronment on Organ	isms: How do envir	onmental pressure	s promote a change in species
Nutrient and Gas	ells: HOW dre cells a	arrangeu in a muitic	in putriont and gas	roquiromonts	Adaptations: How	nuance:	roaco tho organism	's ability to survive	
hetween autotror	he and heterotron	he?	in nutrient and gas	requirements	Theory of Evolution	on by Natural Select	tion. What is the re	lationshin hetweer	evolution and biodiversity?
Transport: How d	oes the composition	n of the transport i	medium change as i	it moves around	Evolution- the Ev	idence: What is the	evidence that sunr	orts the Theory of	Evolution by Natural Scelection?
an organism?	oes the compositio		ficulum change as		Working Scientifi	ically Skills: Process	sing Data and Infor	mation Analysing [Data and Information Problem
Working Scientifi	cally Skills: Questio	oning and Predictin	g. Processing Data a	and Information.	Solving, Commun	licating			
Analysing Data, a	nd Information. Pro	oblem Solving. Com	municating		Skills: understand	ding of HSC key verb	s. answering HSC s	tyle questions, mul	tiple choice, short answer, long
Skills: understand	ling of HSC kev ver	bs. answering HSC (uestions, multiple	choice. short	response, visualis	ation. ICT skills. scie	entific terminology.	-,,,,	
answer, long resp	onse, visualisation	, ICT skills, scientific	terminology, writi	ng scientific	Assessment: Prac	ctical Portfolio week	8 Term 2		
reports			0,7	0					
Assessment: Prac	tical Portfolio wee	k 8 Term 2							
				Field Study			Practical		
				Excursion			Portfolio		
							40%		

Module 3: Biological Diversity Outcomes: B/011-1; B/011-2; B/011- 3; B/011-4; B/011-2; B/011-5; B/011-6; B/011- 7; B/011-10 Module 4: Ecosystem Dynamics Outcomes: B/011-1; B/011-2; B/011-3; B/011-4; B/011-5; B/011-6; B/011-7; B/011-11 Content Focus: Monitoring biodiversity is key to being able to predict future change. Monitoring, including the monitoring of abiotic factors in the environment, enables ecologists to design strategies to reduce the effects of adverse biological change. Students investigate adaptations of organisms that increase the organism's ability to Module 4: Ecosystem Dynamics Module 4: Ecosystem Dynamics Module 4: Ecosystem Dynamics Module 4: Ecosystem Dynamics Outcomes: B/011-1; B/011-2; B/011-3; B/011-3; B/011-4; B/011-5; B/011-6; B/011-7; B/011-11 Content Focus: The Earth's biodiversity has increased since life first appeared on the planet. The Theory of Evolution by Natural Selection can be periodic increases and decreases in populations and biodiversity. Scientific knowledge derived from the fossil record, and geological evidence has scientists to offer valid explanations for this progression in terms of biotic and abiotic relationships. Students engage in the study of past ecosystem can be used to predict environmental change into the future. Working Scientifically: In this module, students focus on developing questions and hypotheses when planning and conducting investigations. Students study trends, pa relationships in data to analyse the interrelationships within and dynamics of an ecosystem. Students are provided with opportunities to engage Scientifically skills throughout the course. Inquiry questions: Population Dynamics: What effect can one species have on the other species in a community? Past Ecosystems: How do selection pressures within an ecosystem i
survive in their environment. Future Ecosystems- How can human activity impact on an ecosystem? Working Scientifically Skills: Planning and conducting investigations, Processing Data and Information, Analysing Data, and Information, Proble Communicating Skills: understanding of HSC key verbs, answering HSC style questions, multiple choice, short answer, long response, visualisation, ICT skills, scie Assessment: Final Examination week 8 & 9 Term 3 Final Exams Final Exams 25% 25%