TABLE OF SPECIFICATIONS FOR NATS 101, INTRODUCTION TO GLOBAL CHANGE (Instructor: K.K. Hirschboeck) (NATS-Specific & Overall GenEd Program Desired Outcomes)

	DESIRED OUTCOMES					-				EV	ALUA	TION	INSTR	UME	NT					-			
	[NOTE: see ASSIGNMENT LIST for full list of all assignments]	G-1 Science Quotes &	G-2 Time Series Trends	G-3 Periodic	G-4 STELLA mdoels	G-5 Physics Car Crashes	G-6 Atmo Circ I ink	G-7 Classify Tree-Ring	G-8 Cross- dating	G-9 Global Wrm Debate	I-1 Expon Growth	I-2 Matter, etc	I-3 Laws of Motion	I-4 Intro to Tree Rings	I-5 Skeleton Plotting	I-6 Tree-Ring Research Rpt	D-1 Sci Case Studies	D-2 Linking to Life	Self Checks	Readiness Ouizzes	In-class Indv & Grp Tests	Exams	Survey
ATTITUDINAL	Recognize and appreciate the complexity of scientific issues	X							X								x						
	Recognize and appreciate the integrative nature of science, including cross-disciplinary contributions								X					X		X			X			X	
	Recognize and appreciate the role of science beyond the classroom in everyday life	X				X											x						x
	Incorporate an appreciation of science in one's world view	x																X					X
	Perform appropriate mathematical calculations					X					X		x		x					X	x	x	
	Present data in tables, graphs and charts					X			x		X		X		X								
SKILLS	Interpret data presented in tables, graphs and charts		X						X			X	X		X				X	X	X	X	
IVE S	Generate data								X														
ITAT	Analyze data (using abstract reasoning)				X				X							x							
INAU	Formulate hypotheses								X							X							
& QL	Test hypotheses								X							X							
NCE	Design experiments					x			x														
SCIEN	Write about scientific knowledge															x	x					x	
	Read and understand scientific topics presented in popular sources such as magazines and newspapers									X						-	X	x				_	
	Understand the process involved in the communication of scientific results	X								X							x	x					

	DESIRED OUTCOMES									EV	ALUA	TION	INSTE	RUME	NT								
	[NOTE: see ASSIGNMENT LIST for full list of all assignments]	G-1 Science Ouotes &	G-2 Time Series Trends	G-3 Periodic Table	G-4 STELLA mdoels	G-5 Physics Car Crashes	G-6 Atmo Circ Link	G-7 Classify Tree-Ring	G-8 Cross- dating	G-9 Global Wrm Debate	I-1 Expon Growth	I-2 Matter, etc	I-3 Laws of Motion	I-4 Intro to Tree Rings	I-5 Skeleton Plotting	I-6 Tree-Ring Research Rpt	D-1 Sci Case	D-2 Linking to Life	Self Checks	Readiness Ouizzes	In-class Indv & Grp Tests	Exams	Survey
LUATIVE THINKING ILLS	Question assertions of knowledge & probe for assumptions behind a line of reasoning									X							X						
	Discriminate between observations and inference & recognize soundness of conclusions								x	X						x							
	Draw inferences from evidence and recognize when firm inference cannot be drawn								X							x							
EVA SK	Discriminate between inductive and deductive reasoning	X																					
NL &]	Use words to accurately express ideas, not as jargon																		X	X	x		
CRITICA	Be conscious of one's own thinking and reasoning processes & test one's own line of reasoning and conclusions for internal consistency									X						X		X					
CESS	Apply critical reading skills																		X	X	X		
	Work effectively in a "working group environment"	X	x	x	x	X	X	x	X	X											x		
ION AC	Compose written material in multiple formats (papers, reports, quiz & exam answers, essays, etc.)										x					X	X	X			x		
RMAT	Evaluate written material for form, organization, grammar, punctuation, and style.															X							
INFC	Revise and rewrite written material based on feedback																					X	
NN & SK	Perform effective oral communication when appropriate								X	X													
DITE:	Access library resources for information																	X					
MUNIC/	Access computer resources (e.g., searchable databases, world wide web) for information									X				X	x	X	X	X					
COM	Write with word-processing software														X	x							
-	Organize and analyze information using spreadsheet software																						

DESIRED OUTCOME											EV	ALUA	TION	INSTE	RUME	NT								
	[NOTE: see ASSIC full list of all assig	GNMENT LIST for enments]	G-1 Science Ouotes &	G-2 Time Series Trends	G-3 Periodic Table	G-4 STELLA mdoels	G-5 Physics Car Crashes	G-6 Atmo Circ Link	G-7 Classify Tree-Ring	G-8 Cross- dating	G-9 Global Wrm Debate	I-1 Expon Growth	I-2 Matter, etc	I-3 Laws of Motion	I-4 Intro to Tree Rings	I-5 Skeleton Plotting	I-6 Tree-Ring Research Rpt	D-1 Sci Case Studies	D-2 Linking to Life	Self Checks	Readiness Ouizzes	In-class Indv & Grp Tests	Exams	Survey
	Recognize and appreciate the relative scale of objects, rates of change, linear and nonlinear growth			X								X												
	Understand the im physical and chem their application to everyday world	Understand the importance of physical and chemical processes and their application to events in the everyday world			X		X						X	X					X					
	Understand the commonality of the scientific approach across two or more disciplines								x		x				x		X		x	x	x	x	x	
	Understand the basics of each	Newton's laws governing force and motion					x							x								x	x	
	of the following & be able to recognize their role in features & processes observed in global change processes: strumation	The laws of thermodynamics governing energy and entropy						X					X							X	X	X	X	
		The role of electromagnetism in nature											X							X	X	X	X	
ONTEN		The atomic structure of matter			X								X							X	X	X	X	
CO	Understand the ess components of the (atmosphere, hydre biosphere, and geo involved in global	Understand the essential components of the Earth system (atmosphere, hydrosphere, biosphere, and geosphere) that are involved in global change processes				x														x	x	X	X	
	Understand feedba Earth system comp they work	acks that link the ponents and how				X														X	X	X	X	
	Understand and be able to explain	past climatic variability & change		X						x	x							x		x	x	X	x	
	and discuss the scientific principles underlying these global	global warming due to enhanced greenhouse effect		X		x					X								x	x	x	x	X	
	environmental change problems	ozone depletion																	X	X	X	X	X	
	unu issues.	& biodiversity																		x	x	x	x	

DESIRED OUTCOME									EV	ALUA	TION	INSTI	RUME	NT								
[NOTE: see ASSIGNMENT LIST for full list of all assignments]	G-1 Science Onotes &	G-2 Time Series Trends	G-3 Periodic Table	G-4 STELLA mdoels	G-5 Physics Car Crashes	G-6 Atmo Circ Link	G-7 Classify Tree-Ring	G-8 Cross- dating	G-9 Global Wrm Debate	I-1 Expon Growth	I-2 Matter, etc	I-3 Laws of Motion	I-4 Intro to Tree Rings	I-5 Skeleton Plotting	I-6 Tree-Ring Research Rpt	D-1 Sci Case Studies	D-2 Linking to Life	Self Checks	Readiness Ouizzes	In-class Indv & Grp Tests	Exams	Survey
Develop a global awareness of how human beings affect and are affected by processes linked to global environmental change									X								X					X
Apply course knowledge to make informed, scientifically based, decisions about your personal role and responsibilities									X								X					X
Understand how modeling is used as a tool in global change science				X					x											X	X	
Understand how remote sensing is used as a tool in global change science																		X	X	X	X	
Understand how paleo data (e.g., tree-rings) are used as tools in global change science		X					x	X					X	X	X			X	X	X	X	