

★ GC 170A1-Lec 003+004 INTRODUCTION TO GLOBAL CHANGE - Fall 2012 ★

Time / Place: M W F 1:00 – 1:50 pm in BioSciWest, room 301

For complete SYLLABUS see the class webpage: [fp.arizona.edu/kkh/nats101gc/](http://fp.arizona.edu/kkh/nats101gc/)

**COURSE DESCRIPTION** -- Introduction to Global Change presents the basics of physical science within the context of global environmental changes (climatic change, global warming, ozone depletion, deforestation, etc.) that impact Earth and its inhabitants. The course involves hands-on activities, discussions, online work & interactive learning teams.

**PROFESSOR** -- Dr. Katie Hirschboeck (*Laboratory of Tree-Ring Research*) Email: [katie@LTRR.arizona.edu](mailto:katie@LTRR.arizona.edu)  
Phone: 621-6466 Office: Tree-Ring Laboratory, rm 208 West Stadium (*a map to my office is on webpages*)  
Office hrs: see info on “Teaching Team” part of Class Webpage & by appointment (*arrange time in advance via email*)

**GRADUATE TEACHING ASSISTANTS** See the webpage under Teaching Teams for the GTA office hours & locations

*Classroom TA's: (for TA office hours and location, see “Teaching Team” part of Class Webpage)*

Laura Marshall – (Natural Resources) [larmarsh@email.arizona.edu](mailto:larmarsh@email.arizona.edu) Resource TA:  
Adriana Zuniga – (Arid Lands) [aazuniga@email.arizona.edu](mailto:aazuniga@email.arizona.edu) Elizabeth May (Anthropology)  
Saeahm Kim (Hydrology & Water Resources) [saeahmk@email.arizona.edu](mailto:saeahmk@email.arizona.edu) [emmay@email.arizona.edu](mailto:emmay@email.arizona.edu)

**TEXTBOOKS** (*Both are REQUIRED*) – *Electronic Text: The Science of Global Change, An Introduction + Dire Predictions, Understanding Global Warming* - Available for purchase in ASUA bookstore as a package

**CLASS NOTES** (*REQUIRED*) -- Includes notes for each class period and supplementary info. Will be available in the ASUA bookstore in the 1stweek of classes.

**TURNING TECHNOLOGIES RESPONSE CARD (“clicker”) & INTERNET ACCESS** (*REQUIRED*) – This class uses “clickers” in the classroom and **D2L online tools**. You will need to bring your clicker to each class & access D2L daily to keep up with the course material. Regular internet access will also be needed for class assignments, etc.

**Code of Academic Integrity & GC 170A1 Course Policies:** The UA Code of Academic Integrity can be found at: <http://deanofstudents.arizona.edu/codeofacademicintegrity> You are responsible for knowing it, understanding it, and adhering to it! NO exceptions! In addition to the Code, you are responsible for knowing and adhering to all GC 170A Course Policies as specified in the Course FAQ at: <http://fp.arizona.edu/kkh/nats101gc/faq.htm>

**Honors Credit** is available for this course in Sec 004H by being a preceptor for the class. Contact Dr. H for more details. **Undergraduate Preceptorships** are available -- see our class webpage under **Teaching Team** for details.

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★ GC 170A1- Introduction to Global Change Background Info Sheet – Fall 2012 ★

NAME \_\_\_\_\_ Email address: \_\_\_\_\_

Class (*circle one*) Fresh Soph Junior Senior Other \_\_\_\_\_

Major (if known) \_\_\_\_\_ and/or Academic Interests: \_\_\_\_\_

Please fill in the answers to the following questions: (*continued on back page*) ==>

Why did you sign up for this course?

After looking at the Course Description and the topics on the schedule, what topics specifically interest you and what do you hope you will learn in this course?

What is your current feeling about, or attitude toward, science? (*Please be totally honest!*)

**GRADING CRITERIA** Your final **LETTER GRADE** will be based on the % earned of **500 possible points** in the class, distributed as follows. The letter grade cutoffs are: A (90-100%), B (80-89%), C (70-79%), D (60-69%), E (<60%)

	<b>GRADED ACTIVITIES</b>	<b>Individual pts</b>	<b>Group pts</b>
	Weekly online <b>Readiness Quizzes</b> 9 @ 5 pts, (+ 2 "practice" quizzes)	45	--
	<b>In-Class Tests</b> 4 @ 20 pts (individual) and 5 pts (group)	80	20
	<b>Midterm Exam</b> (100 pts)	100	--
	<b>Final Exam</b> (105 pts)	105	--
	<b>Group Assignments</b> (in-class) <i>variable pts</i>	--	30
	<b>Individual Short Writing Assignments</b> (5 @ <i>variable pts</i> )	50	--
	<b>Linking-to-Life Term Project</b> (in 4 parts w/ <i>variable pts</i> )	60	
	<b>Participation</b> ("clicker points" & class contribution)	10	--
	<b>Occasional Bonus points</b>	( <i>extra</i> )	( <i>extra</i> )
	<b>TOTAL POINTS</b> (% POSSIBLE out of <b>500</b> )	<b>450</b> (90%)	<b>50</b> (10%)

**Students with Disabilities:** If you anticipate issues related to the format or requirements of this course, please meet with Dr H as soon as possible and no later than September 9th so that we can discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; drc.arizona.edu) and notify Dr. H of your eligibility for reasonable accommodations.

### ★ GENERAL OUTLINE OF TOPICS FOR THE SEMESTER ★

**Week** (w/ tentative dates of In-Class Tests & Exams)

- 1 Course Overview / Global Issues / On Science & Being a Scientist / Global Change Scales
- 2 Global Change - Time Series / Matter & Energy Overview
- 3 *Labor Day (no class)* / Electromagnetic Radiation / Electromagnetic Spectrum
- 4 Radiation Laws / **Test #1**
- 5 Applying the Radiation Laws/ Atmospheric Structure & Composition
- 6 Thermodynamics: Energy Transfer & Conservation / **Test #2**
- 7 Global Change Tools: Natural Archives and Tree-Rings
- 8 Wrap up / **Midterm Exam** / Global Energy Balance
- 9 Global Energy Balance (cont.)/ Systems & Feedbacks / How Climate Works
- 10 How Climate Works (cont.) / Natural Climate Forcing /
- 11 Natural Climate Forcing (cont.) / **Test #3**
- 12 Ozone Depletion & Anthropogenic Forcing / Global Warming & Anthropogenic Forcing
- 13 *Veteran's Day (no class)* / Global Warming & Anthropogenic Forcing (cont.)
- 14 Climate Change Impacts & Issues / *Thanksgiving Break (no class)*
- 15 Climate Change Impacts & Issues (cont.) / **Test #4** / Climate Action Debate
- 16 Climate Change Adaptations & Solutions / Global Change Wrap-up

**Sec 003 + 004 Final Exam - Thursday Dec 13th @ 1:00 - 3:00 pm**

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 Check if applicable:

I am an Honors Student       I am a student with special needs (Disability Resource (DRC), SALT, etc.)

➔ Tell me one thing about yourself that you think would be good for me (Dr. H) to know about you!!!

Now give your best, most specific, answer to the following question in one or two sentences.

(If you have NO idea whatsoever, write "DON'T KNOW" -- but if you have some inkling, please give it a try.)

(1) What is the GREENHOUSE EFFECT and how is it related to GLOBAL WARMING?