

# GC 170A1-Sec 001+002 INTRODUCTION TO GLOBAL CHANGE - Fall 2015

Time / Place: Mon & Wed 2:00 pm – 3:15 pm in BioWest room 301

The complete SYLLABUS is at: [www.ltrr.arizona.edu/kkh/natsgc/syllabus.htm](http://www.ltrr.arizona.edu/kkh/natsgc/syllabus.htm)

**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: Bannister Tree-Ring Building, room 319 (a map to my office is on the class webpage)  
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 & location  
Diana Zamora-Reyes (Hydrology & Water Resources) [dzamorareyes@email.arizona.edu](mailto:dzamorareyes@email.arizona.edu)  
Ryan Lee – (Arid Lands Resource Sciences) [rhlee@email.arizona.edu](mailto:rhlee@email.arizona.edu)

**TEXTBOOKS** (Both are REQUIRED) – *Electronic Text: The Science of Global Change – Custom E-Book + 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 by Aug 31st (or earlier). Please bring it to every class, beginning Aug 31<sup>st</sup>.

**TURNING TECHNOLOGIES RESPONSE CARD ("clicker") OR a RESPONSEWARE LICENSE (REQUIRED)** – This class uses "clickers" or equivalent response devices in the classroom. You will need to bring your clicker or a ResponseWare device (e.g., smartphone, or tablet) to each class. Details are posted on the class webpage under Quick Links and in D2L. You will also need regular internet access to complete online assignments and keep up with the course.

**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://www.ltrr.arizona.edu/kkh/natsgc/faq.htm>

**Honors Credit** is available for this course in Sec 002H 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.

**GRADING CRITERIA** Your final LETTER GRADE will be based on the % earned of all 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 %</b>	<b>Group %</b>
	Weekly online <b>Readiness Quizzes</b> 8 graded plus "practice" quizzes	8%	--
	<b>In-Class Tests</b> ( 4 combined individual + group tests)	15%	5%
	<b>Midterm Exam</b>	20%	--
	<b>Final Exam</b>	20%	--
	<b>Group Assignments</b> (in-class) weekly at variable weights	--	5%
	<b>Individual Short Writing Assignments</b> ~ 5 during semester at variable weights	15%	--
	<b>Linking-to-Life Term Project</b> ( multi-part project distributed throughout semester)	10%	
	<b>Participation ("clicker points")</b>	2%	--
	<b>Occasional Bonus points</b>	(extra)	(extra)
	<b>TOTAL POINTS</b> (100 % POSSIBLE)	<b>90%</b>	<b>10%</b>

**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 Sep 11th 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 ([drc.arizona.edu](http://drc.arizona.edu)) and notify Dr. H of your eligibility for reasonable accommodations.

## GC 170A1 Sec 001 + 002 SEMESTER-ON-A-PAGE – FALL 2015

NOTE: This schedule may need to be revised as the semester progresses – updates will be posted online

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>AUGUST</b>	Aug 23	<b>24</b> #1 -- Course Overview & #2 – Global Change: the Big Picture	25	<b>26</b> #3 – Matter & Energy Overview <b>RQ- A &amp; B</b> <i>(Practice online quizzes)</i>	27	28	29
	30	<b>31</b> #3 - Matter & Energy Applied <b>RQ-1 CUTOFF</b>	SEP 1	<b>2</b> #4 – Electromagnetic Radiation	3	4	5
<b>SEPTEMBER</b>	8	<b>7</b> Labor Day <i>- no classes -</i>	8	<b>9</b> #5 - The Radiation Laws - I <b>RQ-2 CUTOFF</b>	10	11	12
	13	<b>14</b> #5 - The Radiation Laws - II	15	<b>16</b> <b>TEST #1</b>	17	18	19
	20	<b>21</b> #6 – Atmo Structure & Chemical Composition - I <b>RQ-3 CUTOFF</b>	22	<b>23</b> #6 – Atmo Structure & Chemical Composition - II	24	25	26
<b>OCTOBER</b>	27	<b>28</b> #7 A –Thermodynamics, Energy Transfer & Storage <b>RQ-4 CUTOFF</b>	29	<b>30</b> #7 B – Thermodynamics Laws / Motion Laws & Energy Transformations	OCT 1	2	3
	4	<b>5</b> #7 C – Applications: Energy Efficiency, Transportation & Global Change	6	<b>7</b> <b>TEST #2</b>	8	9	10
	11	<b>12</b> #8 – The Global Energy Balance - Introduction	13	<b>14</b> <b>MIDTERM EXAM</b>	15	16	17
	18	<b>19</b> #8 – The Global Energy Balance - Applied	20	<b>21</b> #9 – Systems & Feedbacks <b>RQ-5 CUTOFF</b>	22	23	24
<b>NOVEMBER</b>	25	<b>26</b> #10 – How Climate Works: “A Primer”	27	<b>28</b> #11 Natural Climatic Forcing <b>R Q-6 CUTOFF</b>	29	30	31
	NOV 1	<b>2</b> <b>TEST #3</b>	3	<b>4</b> #12 – Ozone Depletion- I <b>RQ-7 CUTOFF</b>	5	6	7
	8	<b>9</b> 12 – Ozone Depletion- II	10	<b>11</b> <i>Veteran’s Day</i> <i>- no classes -</i>	12	13	14
	15	<b>16</b> #13 A: Global Warming I Carbon Sources & Sinks <b>RQ-8 CUTOFF</b>	17	<b>18</b> #13 B: Global Warming II Radiative Forcing	19	20	21
	22	<b>23</b> #13 C: Global Warming III Natural Archive evidence	24	<b>25</b> To Be Announced	26	27	28 <i>Thanks giving Break</i>
<b>DECEMBER</b>	29	<b>30</b> #13 D: Global Warming IV Sorting it all out w/ Models	DEC 1	<b>2</b> <b>TEST #4</b>	3	4	5
	6	<b>7</b> #14 Climate Change: Where Do We Go From Here?	8	<b>9</b> Global Change Wrap-Up	10 <i>Reading Day</i>	11 <i>Finals Begin</i>	12
	13	14	15	<b>16</b> <b>FINAL EXAM</b> 1:00 pm – 3:00 pm <b>RQ-9 CUTOFF</b>	17	18	19

Online Self Test & Readiness Quiz (RQ) Topics

*\* practice quizzes*

RQ-A\* – Syllabus & FAQ \*

RQ-B\* – Global Change Overview \*

RQ 1 – Energy & Matter

RQ 2 – Electromagnetic Spectrum

RQ 3 – Atmo Structure & Composition

RQ 4 – Thermodynamics & Laws of Motion

RQ 5 – Systems & Feedbacks

RQ 6 – Natural Climatic Processes & Forcing

RQ 7 – Ozone Depletion

RQ 8 – Global Warming

RQ 9\* – Global Change Recap \*

check off the RQs as you complete them – CUTOFF DATES are listed in calendar above