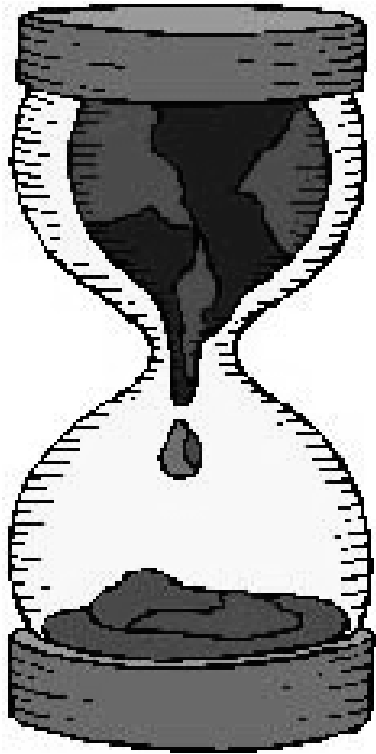


WELCOME TO NATS 101 **INTRODUCTION TO** **GLOBAL CHANGE**



Your Professor:

Dr. Katie Hirschboeck *
Associate Professor of Climatology
Laboratory of Tree-Ring Research

** (pronounced: "hersh-beck")*

Your should have obtained two (2) handouts
when you came in today.

Please fill out the short one and turn it in to
one of the TA's before you leave today.

This is a General Education / Teaching Team Course



Your Teaching Team:

Professor: Dr. Katie Hirschboeck

(Laboratory of Tree-Ring Research, LTRR)

Office: 208 West Stadium (yes, the football stadium!)

Graduate Teaching Assistants (GTA's)



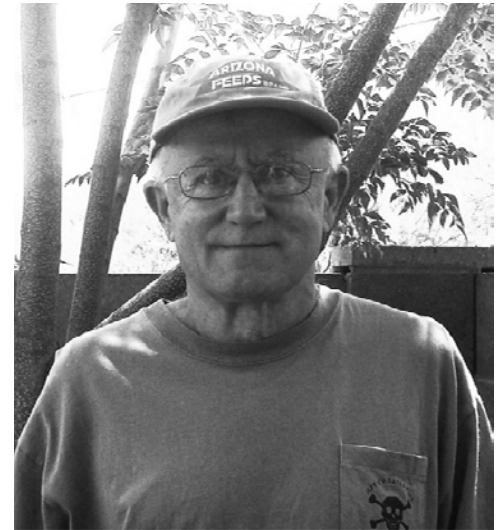


Rebecca Franklin
(Geosciences
& Tree-Ring Lab) **LINAH**



**Adam
Csank**
(Geosciences &
Tree-Ring Lab)

**Steve
Amesbury
KELLY**
(Arid Lands)



**Your
Graduate
Teaching
Assistants
(GTA's)**

LI



Jelena* Vukomanovic
(Arid Lands)

***Pronounced YELL - e - na**

and Undergraduate Preceptors

THIS COULD BE YOU!!



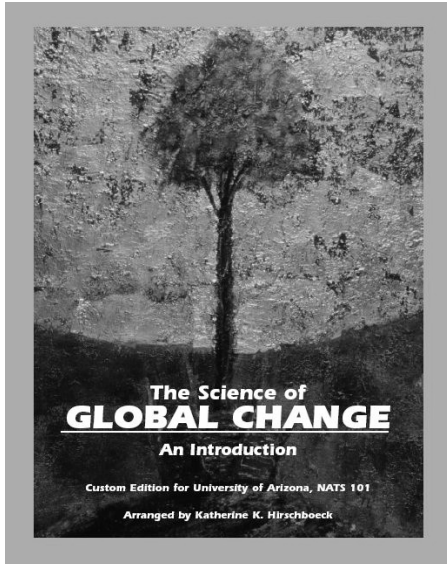
*Come in for an
interview and
learn more!*



THE UNIVERSITY OF ARIZONA

COURSE LOGISTICS

“SGC”



COURSE LOGISTICS

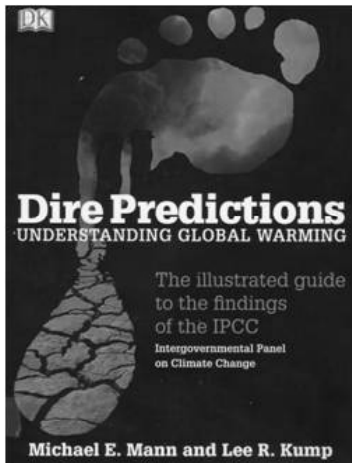
Required: 2 TEXTBOOKS

← Begin reading Chapter 1 now in the first half of “SGC”

NOTE: assigned readings are listed on the **Reading Assignments Schedule**. It's up to you to stay on schedule with the readings!

Find the schedule in your CLASS NOTES PACKET (p 4), it's also in the online Syllabus, in D2L, & on the course webpage under Quick Links.

Also see the weekly D2L Checklist.



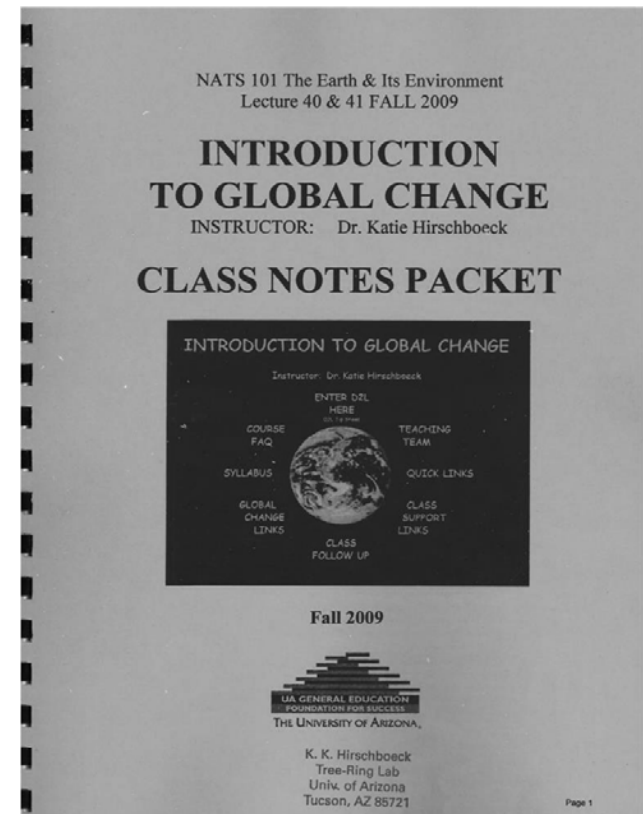
“DP”

. . . Plus a required **CLASS NOTES PACKET** now available in the ASUA bookstore at the Textbook Counter in the basement.

You'll need it for our NEXT CLASS (this Thursday Aug 27) so make every effort to pick it up before then.

NEW THIS FALL: Class Notes are printed on Eco White recycled paper and are recyclable at the end of the semester!

NOTE: When the bookstore runs out of their first run of copies, you will need to order one for yourself – turn around time is about a day.



Bring Class Notes with you to every class to follow along!

How this class will operate:

**Class is divided
into ~ 20
collaborative
learning groups**



**Most of you are
first-year
students & non-
science majors**

COURSE LOGISTICS

DURING CLASS TIME:

- **Lectures**
- **Learning supplements (videos, demonstrations, etc.)**
- **In-Class Individual or Group Learning Activities & Assignments**
- **Tests**
- **Discussions**

COURSE LOGISTICS

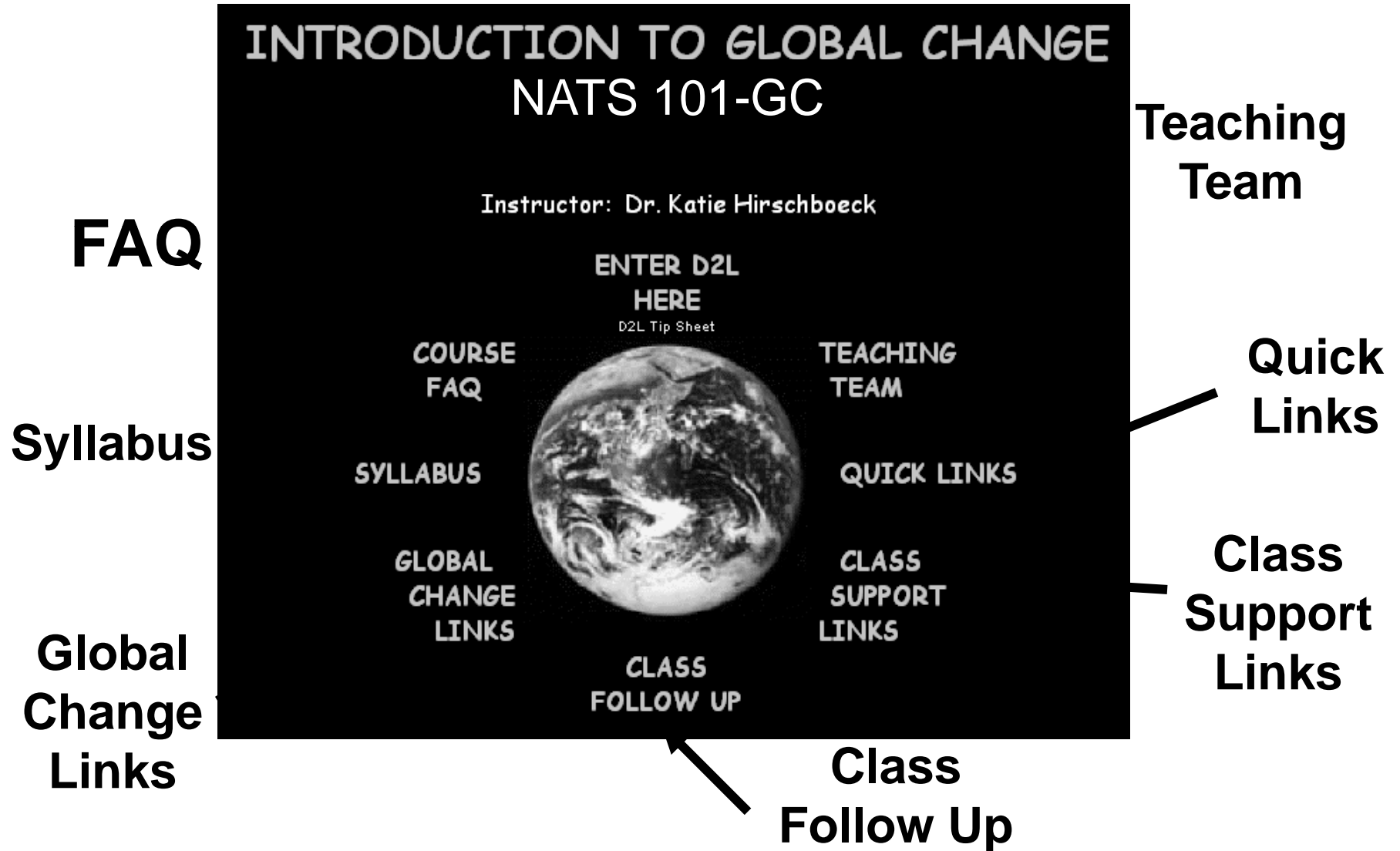
Homework / On Your Own:

- **Textbook reading & studying**
- **D2L Online Activities (Self-tests, online Quizzes, Discussion posts, Chat room, etc.)**
- **Individual Assignments
(some web-based)**

COURSE LOGISTICS

NATS 101-GC Website:

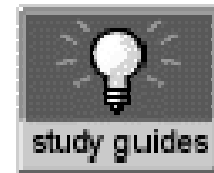
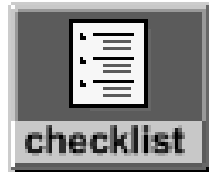
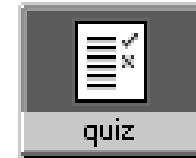
<http://fp.arizona.edu/kkh/nats101gc/>



COURSE LOGISTICS: D2L

“Desire To Learn”

D2L is a web-based online learning environment equipped with many learning tools & links.



You can get to D2L via our NATS 101-GC WebPage
or directly at: <http://d2l.arizona.edu/>
Then you LOGIN using your UA NetID:

INTRODUCTION TO GLOBAL CHANGE
FALL 2006 NATS 101, LEC 40
T & Th 12:30 - 1:45 pm - Integrated Learning Center 140
Instructor: Dr. Katie Hirschboeck

ENTER D2L
HERE
D2L Tip Sheet

COURSE
FAQ

TEACHING
TEAM

SYLLABUS

QUICK LINKS

GLOBAL
CHANGE
LINKS

CLASS
SUPPORT
LINKS

CLASS
FOLLOW UP



**(NOTE: To LOGIN
you MUST be
registered in the
course first!)**

University of Arizona - D2L(Desire2Learn) - Microsoft Internet Explorer

File Edit View Favorites Tools Help Back Forward Stop Home Search

Address <http://d2l.arizona.edu/>

Links Search IMPs Katie kt NATS Syn ARL595a Courses Library UA U of A UA Dept

THE UNIVERSITY OF ARIZONA
TUCSON ARIZONA

Home

NetID Login

UA NetID Login

1. Check that your browser is compatible.

2. Click on the UA NetID Login button.

If you do not have or have forgotten your NetID, visit the [UA NetID site](#).

HELP

ANNOUNCEMENTS:

Pre and Summer Sessions - Pre Session students have access to D2L courses now. Summer Session students will receive access before the first day of class for that session.


HOW TO ACCESS A D2L COURSE:


Students:

1. You need to be registered for the course you are trying to access AND have had a valid UA NetID for at least 24 hours---that's the same ID and password that you use for UA WebMail. If you do not have or have forgotten your UA NetID and/or Password then visit the [UA NetID site](#).
2. Check that your browser is compatible.
3. Click on "UA NetID Login" button in the upper left corner of this page. Enter your UA NetID and Password. You will be passed to your MyHome page in D2L.
4. In the center of the page that appears, find the blue box labeled "Academic Courses." Click on the (+) symbol to the left of the appropriate term. A list of departments will appear.
5. Click on the (+) symbol to the left of the department in which a course is offered.
6. Click on the name of the course. This will take you to the course home page.

Then click on the
course title . . .

My Home D2L Email Locker D2L Help


 THE UNIVERSITY OF ARIZONA
TUCSON ARIZONA

My Settings 

Welcome, stella!


My Settings:

- [My Preferences](#)
- [My Personal Homepage](#)
- [My Profile](#)

Events 


No Events

Open my

Bookmark 

No bookmark added.

Search

News 


► **Classlist Rostering Tool Operational** - Aug 18, 2005
Instructors: the classlist rostering tool is now operational. Thank you for your patience.

► **Fall 2005 Courses Now Active** - Aug 15, 2005
Instructors: All Fall 2005 courses have been set as **active** as of August 15th. If you would like to override our release of your course then you will need to do the following: Login to your course and click on "Edit Course" in the navbar. A new page will appear, with a check box labeled "Active?" Uncheck the box and save your change to make the course inactive. *It is important to remember to activate a course, otherwise students will never be able to see it.*

► **D2L Issues**
If you encounter any error messages, unexpected behaviors or frustrations please fill out a [Problem Report Form](#) so that we can investigate the issue and improve your online learning experience.

2005 Fall

- NATS - NATURAL SCIENCES**
 - [NATS101 F05 034 Intro to Global Change Hirschboeck](#)

Powered by  Desire2Learn

.. and you'll arrive at our D2L Homepage!

My Home | D2L Email | D2L Help | Locker | Logout | Change-Hirschboeck | Logo

THE UNIVERSITY OF ARIZONA
TUCSON ARIZONA

Course Home | Classlist | Chat | Discussions | GRADES | Page | Reading & RQ Schedu

Welcome

Welcome, Katie!

My Settings:

- My Preferences
- My Personal Homepage
- My Profile

Events

NATS 101-040 F'06 Global Change-Hirschboeck

Aug 24, 2006

Read Essay "On Scientific Method" by Robert Pirsig

Open my Events

Updates

- 0 New D2L Email Messages
- 0 New Dropbox Submissions
- 0 Unread Discussion Messages
- 0 Ungraded Quiz Attempts
- 0 Broken Links


Role Switch





To simulate the view of another Role, select a Role from the "My Current Role" drop-down list.

My Current Role:





Search News Change Order Add

test Edit

 **NATS 101 INTRODUCTION TO GLOBAL CHANGE**

 [class website](#)  [FAQ](#)  [checklist](#)  [Follow Up](#)

[NATS 101 GC Webpage](#) [Course FAQ](#) [Checklist Tool](#) [Class Follow Up](#)

 [assignment](#)  [self-test](#)  [quiz](#)  [study guides](#)

[Assignments](#) [Self Test](#) [RQ's](#) [Study Guides](#)

[CLICK HERE](#) for a [GUIDE TO OUR D2L SITE LAYOUT](#) (opens in a new window)

LATEST NEWS: Edit

WELCOME TO NATS 101-GC INTRODUCTION TO GLOBAL CHANGE!!

I look forward to seeing you on the first day of class
TUESDAY Aug 22 at 12:30 pm in [ILC room 140](#)

Please review the layout for our NATS 101 D2L site above,
then visit the **CHECKLIST TOOL** above to find out
what you need to do for the first week of classes.

Your professor,
[Dr. Katie Hirschboeck](#)

General D2L links *(will work in all your D2L courses)*



Chat & Discussion tools

YOUR GRADEBOOK

PAGER LOGOUT



NATS 101-GC Course schedules

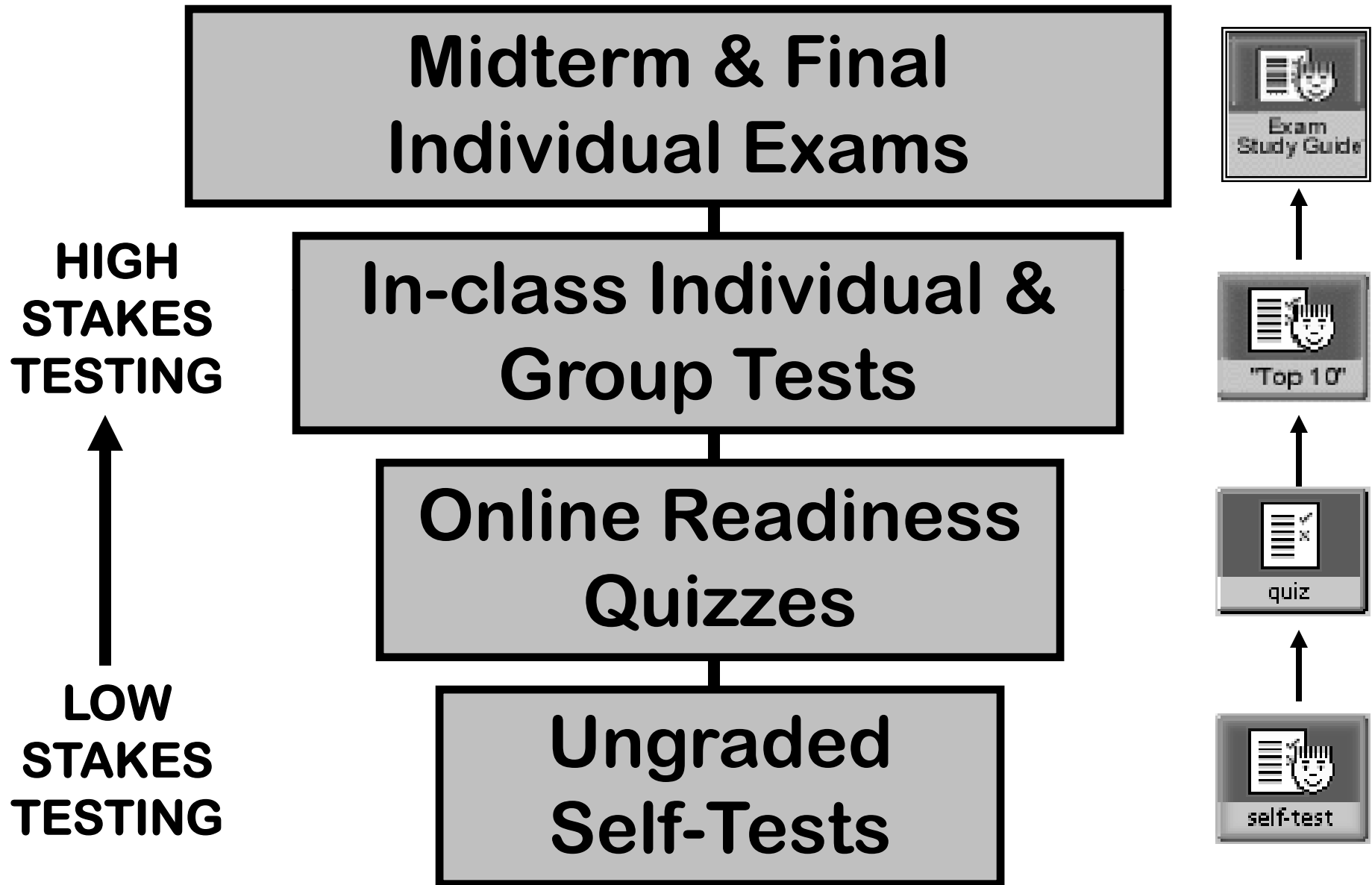
NATS 101-GC COURSE HOME
(Best way to get back to the NATS D2L homepage is to click here – your browser's BACK button may not always work)



Main NATS 101-GC Course Tools here

News & Announcements here
Check this daily for the latest news about the class

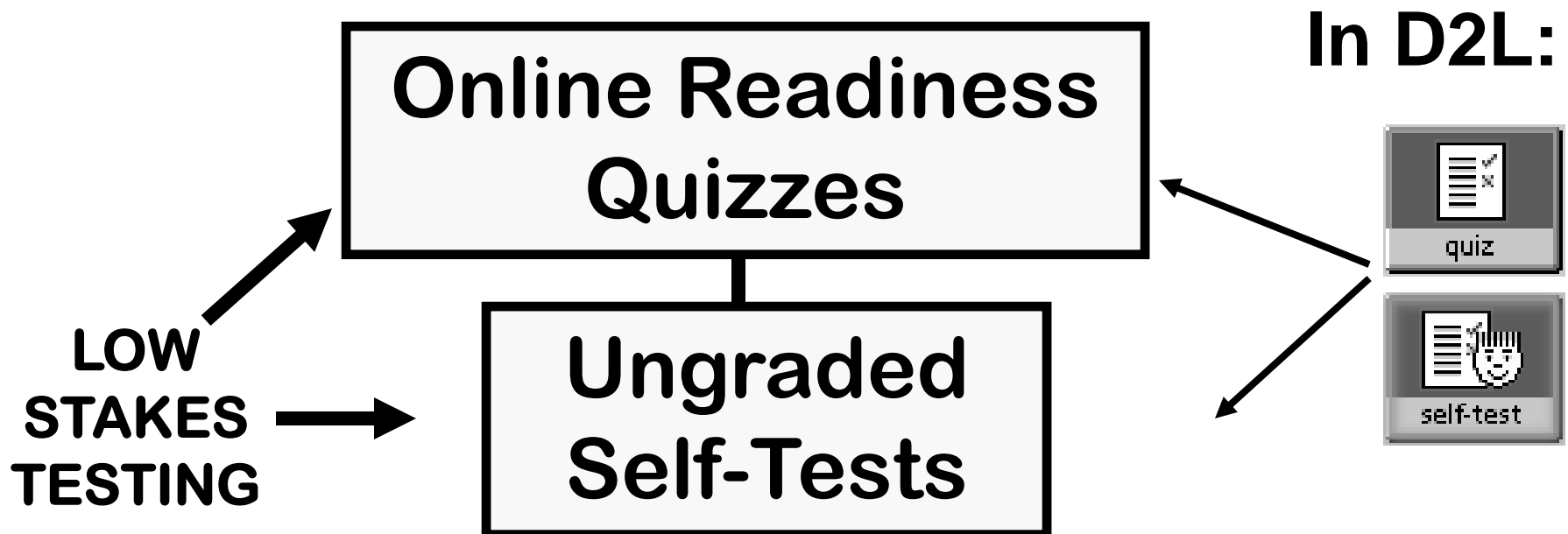
Multi-Tiered Testing Approach:



Multi-Tiered Testing Approach:

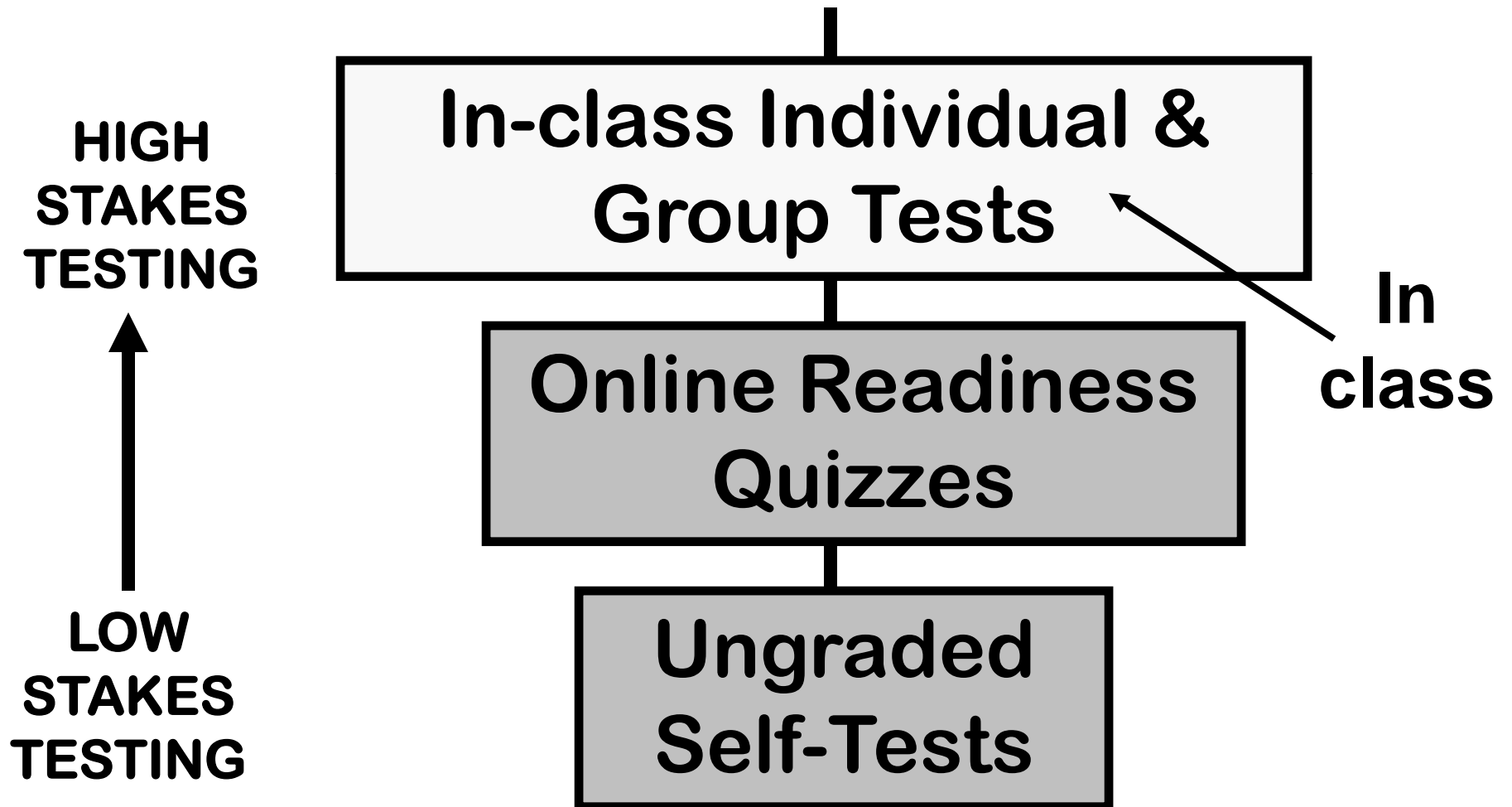
**START OUT WITH UNGRADED
SELF-TEST & SHORT ONLINE QUIZ**

To give you feedback in your reading comprehension, you'll start with "low stakes" online quizzes (0 - 5pts each)



Multi-Tiered Testing Approach:

... and then move on to “higher stakes” 25 pt tests on the course material, taken in class:



Individual in-class testing procedure:

These are short, 10-question quizzes that you'll take after we cover a set of topics in class.

Each question is worth 2 pts = 20 pts for the entire Individual Test.

You'll take it as an individual first . . .

After individual test forms are completed and collected, you'll get into your learning group and take the same test as a group!



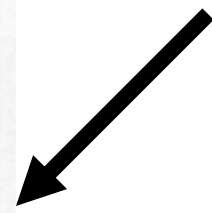
You'll find out your **Group Test** score right after you take it . . .



You'll use IF-AT forms for immediate feedback on your Group Tests & compute your group score yourselves.

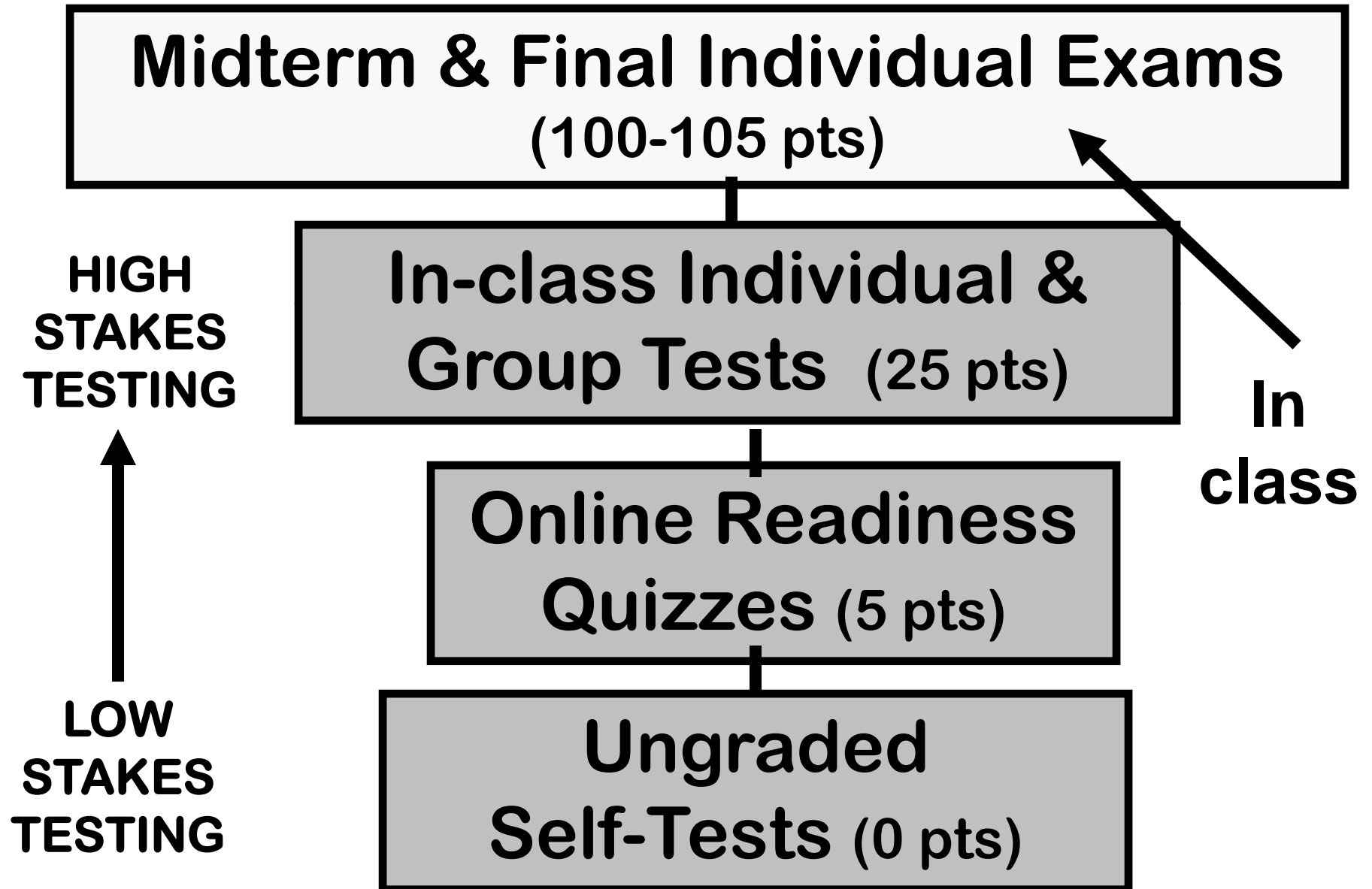
IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT)
Name _____ Test # _____
Subject _____ Total _____
SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.					_____
2.					_____
3.					_____
4.					_____
5.					_____
6.					_____
7.					_____
8.					_____
9.					_____
10.					_____

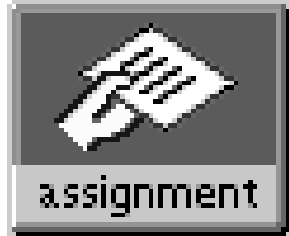


Each question is worth .5 pts on the Group Test for a total of 5 pts

Multi-Tiered Testing Approach:



ABOUT ASSIGNMENTS:



Group
(in class
assignments,
5-10 pts each)

These will not
be announced in
advance!



Individual
(homework
assignments,
variable pts each)

+

a **TERM PROJECT** on
Linking Global Change
Science to Life

**WHAT IS THIS COURSE
ALL ABOUT?**

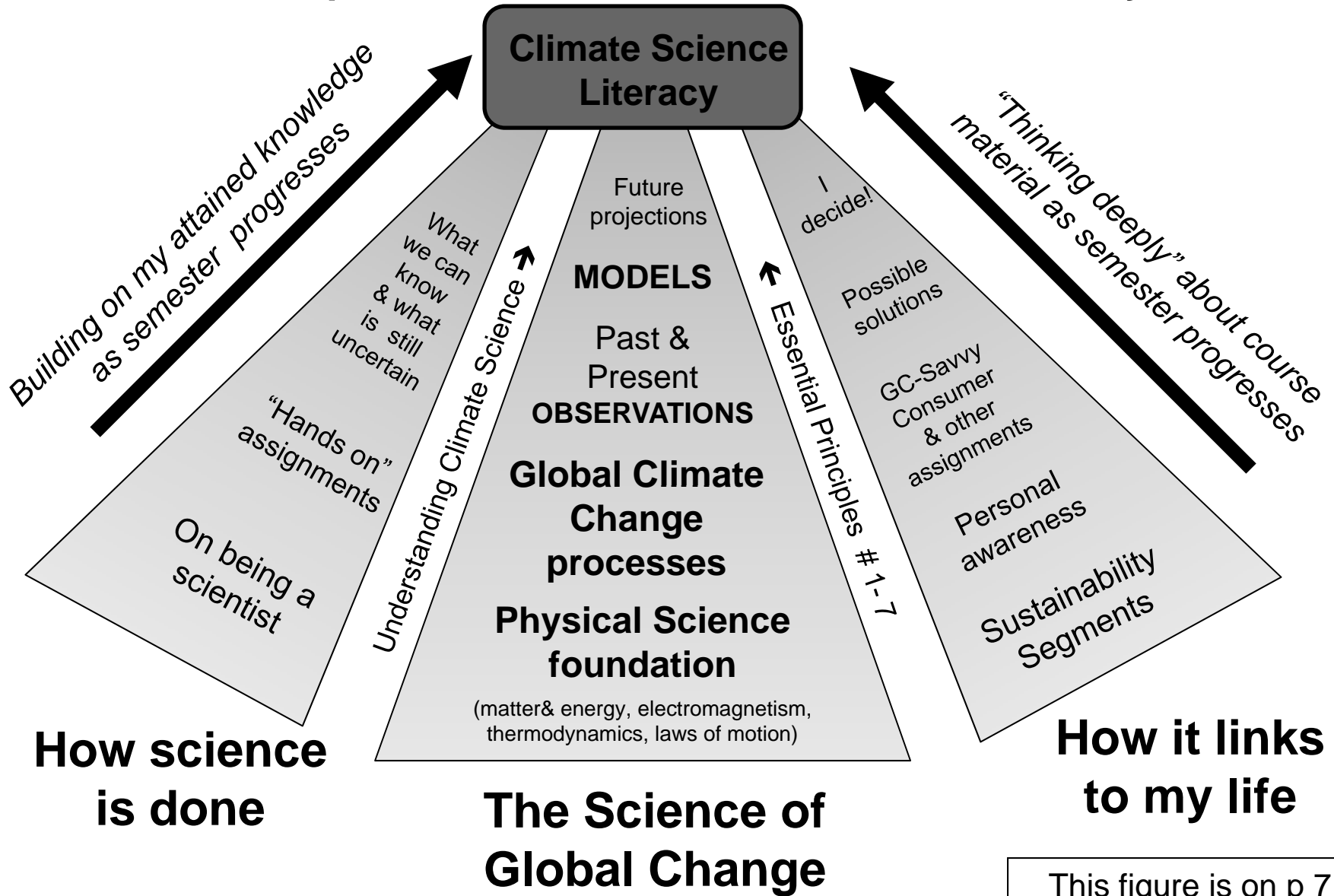
**SCIENCE
& PHYSICAL SCIENCE CONCEPTS**

THE EARTH

**HOW & WHY
GLOBAL CHANGES OCCUR**

**YOUR ROLE AS
A CITIZEN OF OUR PLANET**

GOAL: Enhanced Understanding Of Global Change Science, How It Operates, & What It Means To Me Personally



This figure is on p 7 of Class Notes

Why study the Earth System & Global Change?

The image shows a screenshot of the Earthweek website. At the top left is the Earthweek logo, a globe with the text "EARTHWEEK A DIARY OF THE PLANET". To the right of the logo is a "Subscribe to RSS Feed" button with an RSS icon. The date "Tuesday August 25, 2009" is displayed in the top right corner. Below the date is a section titled "THIS WEEK'S EARTH EVENTS" featuring a photo of a diver and a large jellyfish. The main content area is a world map with various icons representing different events or topics, such as a fish, a bird, a satellite, a thermometer, a lightning bolt, a heart rate monitor, and a beetle. A sidebar on the left contains a list of navigation links: Earth News, Climate Change, Major Earthquakes, Volcanic Activity, Tropical Cyclones, Earth Images, Solar-Ozone Layer, Nature and Wildlife, Emerging Diseases, Humankind, Editorial Staff, Contact, and Buy Earthweek. At the bottom of the map area, there is a "LAST WEEK" button and a "WEEK ENDING AUGUST 21, 2009" button. In the bottom right corner, there is a "FREE WIDGET FOR YOUR BLOG" button with a widget icon.

<http://www.earthweek.com/>

Polar Bears Feast During Cool Arctic Summer

August 21, 2009



The beleaguered polar bear population around Canada's Hudson Bay got a brief reprieve from global warming this summer.

Cooler temperatures resulted in sea ice lasting longer than it has in years, allowing the bears extra time to hunt seals from the ice and raise healthier cubs.

"Even just one or two weeks out on the sea ice can make a difference in how many seals they kill and how much fat they're able to store on their bodies," said polar bear specialist Andrew Derocher of the University of Alberta.

But experts warn that a single summer's break from global warming in much of Arctic Canada doesn't mean that polar bears are out of danger.

"The overall prognosis for bears on a worldwide basis still remains dim at best," said Robert Buchanan, head of California-based Polar Bear International. "This is an aberration," he told Canadian Press.

Polar bear observers in Churchill, Manitoba, on the western shore of Hudson Bay, say that while the animals appear to be doing well this summer, even the largest of the species aren't as big as they once were.



Canada is home to about two-thirds of the world's polar bears.

Global Warming Expands Tropics

August 14, 2009



The world's tropical zone appears to be rapidly expanding north and southward under the influence of climate change, according to a new Australian study.

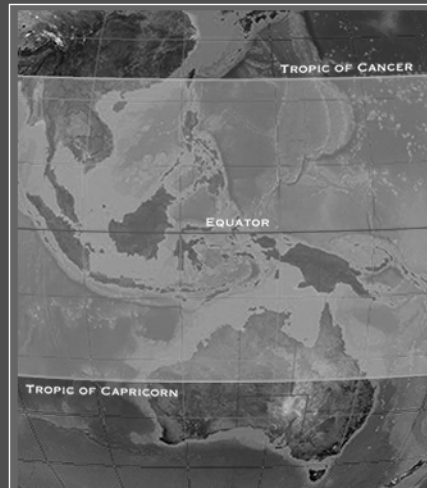
Researchers at James Cook University looked at long-term satellite measurements, atmospheric balloon soundings and climate models in determining that the tropics have widened by more than 300 miles (500 km) over the past 25 years.

The accompanying expansion of sub-tropical climates could also dry out fertile regions that currently receive ample rainfall. Such a development would have devastating effects on health and food production, the researchers warn.

Professor Sandra Harding said tropical climates had already moved more than six degrees of latitude beyond the traditional confines of the Tropics of Cancer and Capricorn, and were continuing to expand.

Regions of temperate Mediterranean climate that border the subtropics appear to be particularly vulnerable, and are already experiencing the effects of climate change, Harding said.

Map Data: Earthbrowser



"The tropics have widened by up to 310 miles in the past 25 years." — Professor Steve Turton of Australia's James Cook University.

Roaches Impervious to Climate Change

August 21, 2009



It's long been touted that the ubiquitous cockroach would likely be one of the few creatures left alive in the wake of a nuclear Armageddon.

New research indicates that the pests are going to have a far easier time surviving global warming in part due to their ability to hold their breath for as long as 40 minutes at a time.

Natalie Schimpf and colleagues at the University of Queensland placed speckled cockroaches (*Nauphoeta cinerea*) in chambers with dry and humid atmospheres, atmospheres with oxygen levels ranging from 5 to 40 percent and atmospheres with carbon dioxide levels ranging from 0.3 to 6 percent for five weeks running.

The insects demonstrated an amazing ability to adjust their breathing patterns to adapt to each radically changed climate.

Photo: Stock



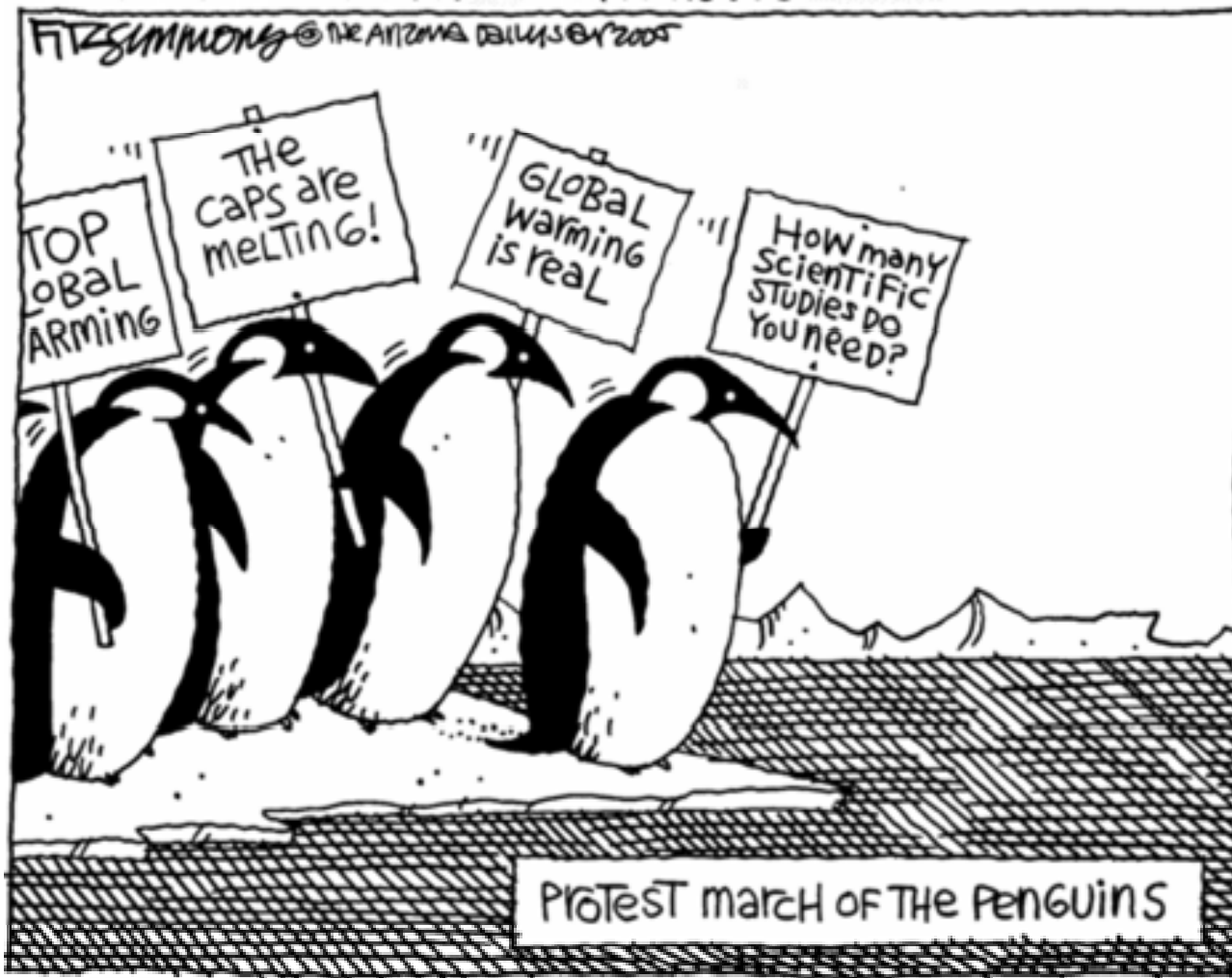
Cockroaches have been observed holding their breath for up to 40 minutes as a way to adapt to an altered climate.

<http://www.earthweek.com/>

Questions GLOBAL CHANGE SCIENTISTS are asking and studying:

- How and why are these changes occurring?
- Are these changes good or bad for people?
- Can human beings do anything to stop or reverse those changes?
- Or are they part of natural variability that will happen no matter what we do?

**THESE ISSUES ARE NOT WITHOUT
CONTROVERSY!! We'll address this too!**



DOING SCIENCE & BEING A SCIENTIST

BASIC PHYSICAL SCIENCE BACKGROUND:

- **The Nature of Matter**
- **Thermodynamics & Energy**
- **Electromagnetic Radiation**
- **Mechanics & Energy**

Physics Fundamentals for
Understanding Global Change



Tools of the
Global Change Scientist



Tying It All Together:
Key Global Change Issues

WHAT KIND OF BACKGROUND DO I HAVE TO HAVE?

- **CRITICAL READING SKILLS**
- **WRITING SKILLS**
- **BASIC MATH & QUANTITATIVE REASONING SKILLS**
- **HIGH SCHOOL SCIENCE**
- **TEAM WORK SKILLS**

**Important: regular computer access is
REQUIRED for this class!**

*(Please fill out the short background form
turn it in before you leave today)*

“Dr. H” CLASSROOM POLICIES

(there are more at online FAQ “Frequently Asked Questions”):

- 1. Sorry, but no questions can be answered *before* class until teaching equipment is set up & ready to go.**
- 2. Questions *after* class will be answered after the equipment has been shut down (best to do this away from the front desk or outside the classroom).**
- 3. All electronic devices (esp. cell phones) must be shut off throughout the class period – including LAPTOPS & NETBOOKS! Permission granted for special circumstances (see how in FAQ). **Absolutely NO TEXTING!****
- 4. Respect your professor and each other. Refrain from conversations with your classmates during lectures, presentations, videos, etc.**
- 5. No food or drink (except in closed containers) in ILC.**

WHAT KIND OF STUDENT SHOULD I BE IN ORDER TO ENJOY THE CLASS & GET A LOT OUT OF IT?

*Students who mesh well with Dr. H's teaching style
and the format of this NATS 101 lecture section:*

- ***Like a class that is structured with lots of online support***
- ***Enjoy working with fellow students in groups during part of the class period (not a loner)***
- ***Have convenient access to a computer and the internet and check it frequently***
- ***Are "visual" learners who like lots of graphics in lectures***
- ***Attend class regularly and like to keep up with the material as it is taught (w/ tiered testing framework)***
- ***Enjoy being in a class geared toward first- and second-year students***
- ***Have a sense of humor !***

WHAT WILL YOU GET OUT OF THIS CLASS IF YOU PUT A COMMITTED EFFORT INTO IT?

- An equal – if not greater – effort and **commitment to YOU** from your Professor and GTA's
(We want to help you succeed!)

- A clear road map for “**what is expected, when**”
in a well-organized class


- The achievement of the **Expected Learning Outcomes** listed in the Webpage's online syllabus,
but also some **FUN** along the way!


- An exceptional amount of **knowledge about GLOBAL CHANGE**

. . . . And here's the evidence →

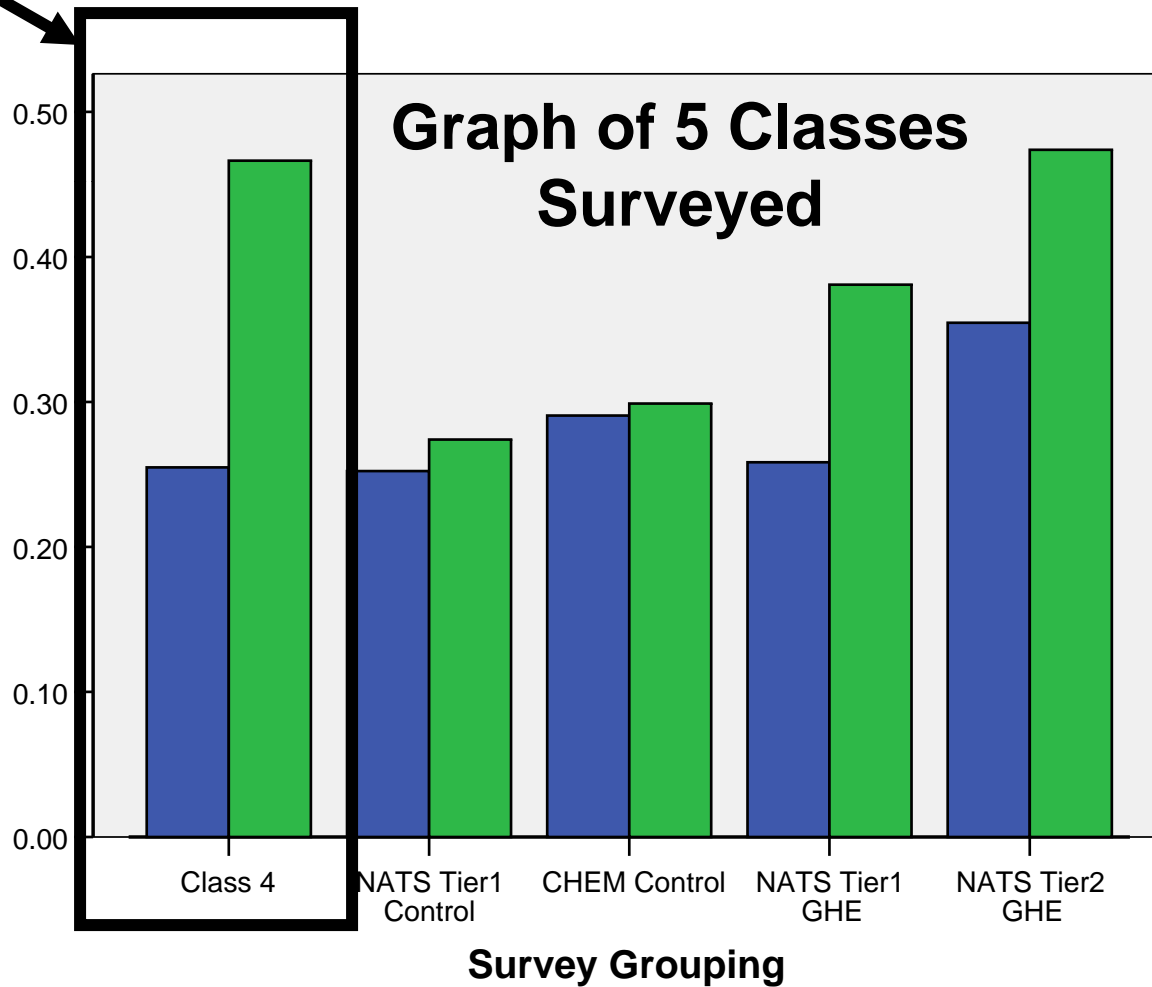
GREENHOUSE EFFECT (GHE) UNDERSTANDING

**Dr. H's NATS
101-GC Class**

 = Start of
Semester
Scores

 = End of
Semester
Scores

Increasing Understanding →



What should I be doing now?

To find out, **always check out the WEEKLY CHECKLIST in D2L!**

- 1. If not yet in D2L: Go to QUICK LINKS & click on the READING ASSIGNMENTS SCHEDULE.**
- 2. You will find a link to connect to the short essay “On Science” by Robert Pirsig – read it before class on Thursday 8/27**
- 3. You will also find info that asks you to read pp 10-13 in CLASS NOTES to prepare for Thursday’s class.**
- 4. Lastly, you can begin reading CHAPTER 1 in SGC, which is a Global Change overview. There is a corresponding SELF TEST and non-graded online practice READINESS QUIZ (RQ) that goes with it.**

NEXT:

About the Teaching Team Program & becoming a Preceptor

(see Syllabus & Nats 101-GC website for additional details on being a Preceptor in this class)



Teaching Teams Program

Putting People Back Into Education

What Does a Teaching Team do for MY class?



- Hands-on projects and activities



- Various Learning Opportunities
(which cater to most learning styles!)
- Helpful Resources and extra support



Who is on YOUR Teaching Team?

- Instructor
- TAs
- Preceptors



What is a Preceptor?



- Motivated and responsible student

- Facilitator

- Peer Tutor

- Classroom leader



So, who can be a
preceptor?



Why should I Become a Preceptor?

- Personal involvement with your course - YOU can help make it a better course through your input
- Learn new professional and leadership skills
- Opportunity to excel in the course !!
- Get to know your professor & TA's as mentors and future references for applications, jobs, etc.
- It's FUN!!!!



Preceptor Compensation?

Preceptors receive 3 units academic credit by enrolling in one of the following courses:

UNVR 197a: Preceptor Training
(for first-time preceptors)

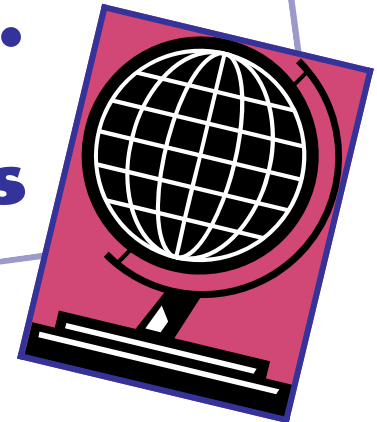
UNVR 397a: Independent Study Preceptorship
(for returning preceptors)

OR preceptors can receive HONORS CREDIT in NATS 101 by enrolling in the co-convened HONORS SECTION . . .

UNVR 197a: Basic Preceptor Training

- Several sections offered at various times
- Sections meet for 2 hours once a week for 9 weeks

UNVR 197a
M.A.P.S.
For
Success



**Training in Communication Skills,
Group Dynamics and Leadership**

UNVR 397a: For Advanced Preceptors

- Gain practical leadership and problem-solving experience
- Learn skills that will help you in all aspects of your life



So, how do I sign -up?

See the PRECEPTOR SECTION
under TEACHING TEAM on our NATS 101-GC
WEBPAGE:



<http://fp.arizona.edu/kkh/nats101gc/how.htm>

RECAP: What should I be doing now?

To find out, **always check out the WEEKLY CHECKLIST** in D2L!

- 1. If not yet in D2L: go to QUICK LINKS & click on the READING ASSIGNMENTS SCHEDULE.**
- 2. You will find a link to connect to the short essay “On Science” by Robert Pirsig – read it before class on Thursday 8/27**
- 3. You will also find info that asks you to read pp 10-13 in CLASS NOTES to prepare for Thursday’s class.**
- 4. Lastly, you can begin reading CHAPTER 1 in SGC, which is a Global Change overview. There is a corresponding SELF TEST and non-graded online practice READINESS QUIZ (RQ) that goes with it.**

**ADDITIONAL ANNOUNCEMENT:
GTA office hours will be held in the
INFORMATION COMMONS
in 104b beginning next week.**

