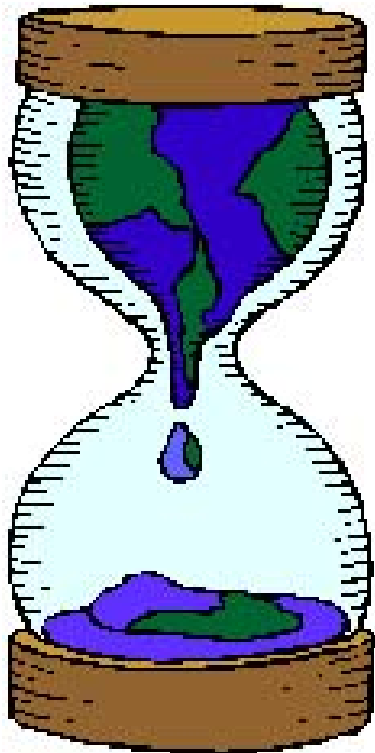


# ***WELCOME TO***

## **NATS 101, Lec 40**

# **INTRODUCTION TO GLOBAL CHANGE**



***Your Professor:***

**Dr. Katie Hirschboeck \***

**Associate Professor of Climatology  
Laboratory of Tree-Ring Research**

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

**Our class meetings  
12:30 - 1:45 pm T TH  
are held here in ILC 140**

**Additional learning activities will take  
place online and outside of the  
classroom with assistance from your  
Teaching Team**

# 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)**





**Ela Czyzowska**



**Rebecca  
Franklin**

## **YOUR GTA's**



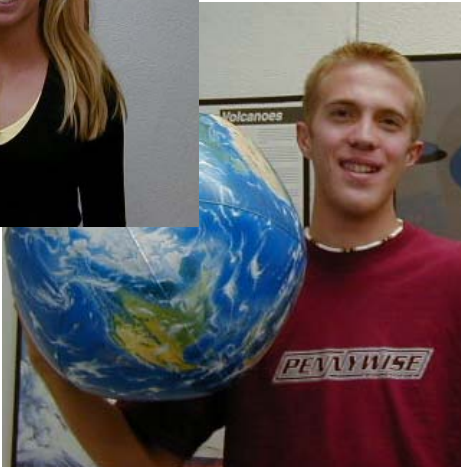
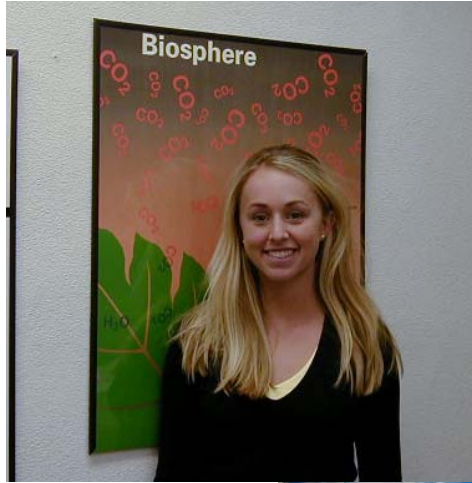
**Jeff Oliver**



**Adam Csank**

# *and* Undergraduate Preceptors

## THIS COULD BE YOU!!



*Come in for an  
interview and  
learn more!*



# **WHAT IS THIS COURSE ALL ABOUT?**

**SCIENCE  
& PHYSICAL SCIENCE CONCEPTS**

**THE EARTH**

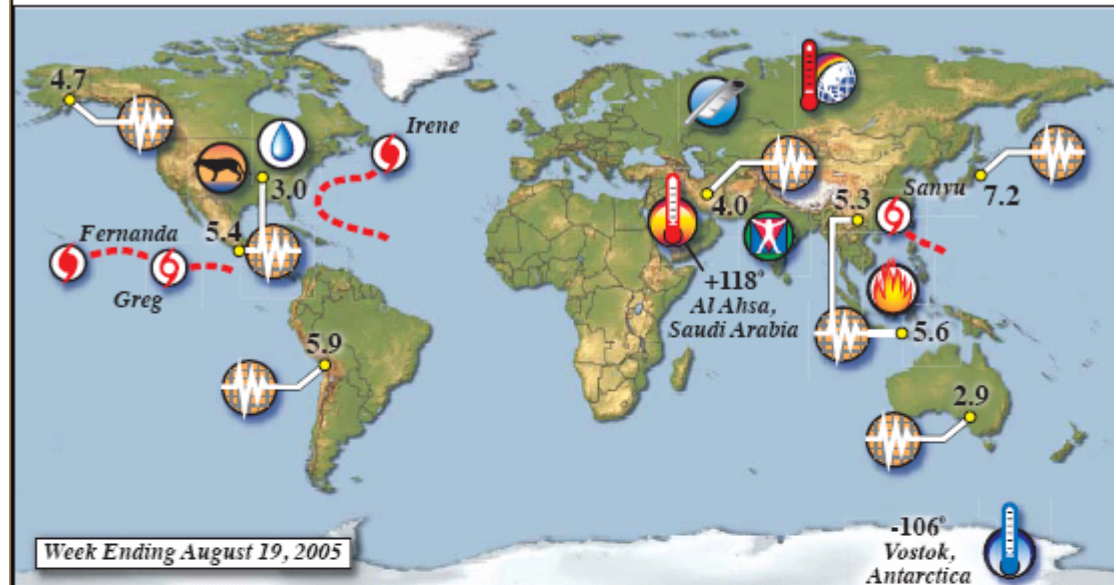
**HOW & WHY  
GLOBAL CHANGES OCCUR**

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

# Why study the Earth System & Global Change?

## Earthweek: A Diary of the Planet

By Steve Newman



### Climate 'Tipping Point'

 Climate scientists warned that a vast expanse of western Siberia has begun an unprecedented thaw, which could cause a "tipping point" in global warming. The area spans nearly 400,000 square miles and is melting for the first time since it formed 11,000 years ago. The discovery, made by Sergei Kirpotin at Tomsk State University in western Siberia and Judith Marquand at Oxford University, was published in *New Scientist*. The researchers say that as the world's largest frozen peat bog melts, it will release vast quantities of methane, a greenhouse gas 20 times more potent in global warming than carbon dioxide.

### Deluge Aftermath

 The death toll from waterborne illnesses around India's financial and entertainment hub of Mumbai (Bombay) reached 251 as the region's health facilities struggled to deal with the aftermath of a week-long monsoon deluge that ended in early August. Officials say that 1,071 people drowned or were crushed by landslides across Maharashtra state during the record cloud-bursts. But poor sanitary conditions combined with lingering pools of water and overflowing rivers have also brought a rash of leptospirosis infections and other waterborne diseases to the disaster zone.

Earthquakes

### Borneo Blazes

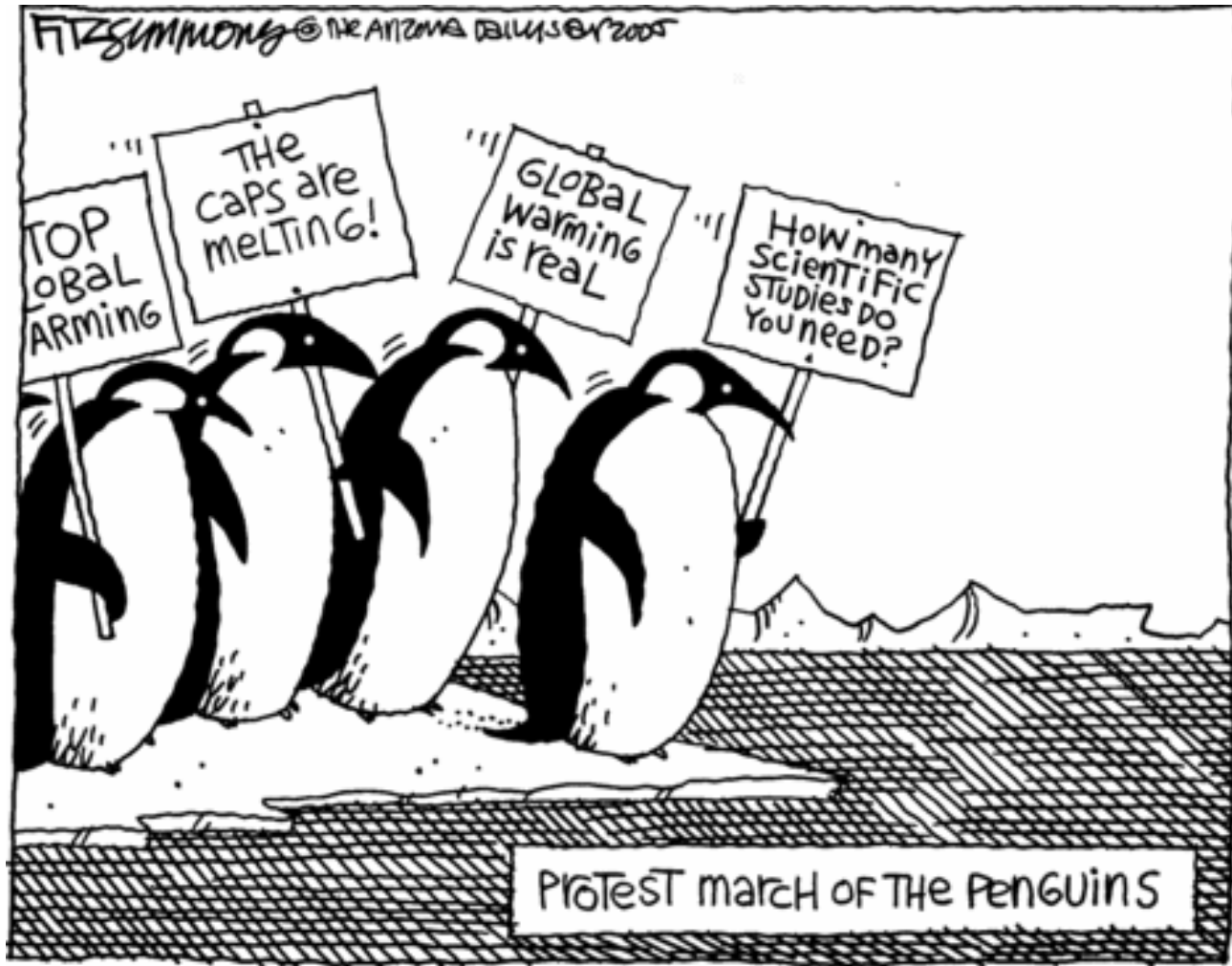
 A huge cloud of smoke from burning forests or Borneo caused a health emergency in parts of Malaysia, then eventually blew northwestward to Thailand's beach resort of Phuket. The annual pall occurs as farmers, illegal loggers and plantation operators, mainly on the Indonesian side of Borneo, set hundreds of fires to clear land. Once the fires are ignited, underground peat and coal seams often keep smoldering for weeks. Australia said it will send a team of firefighting experts to help combat the blazes, and the Association of Southeast Asian Nations announced it has set up a panel of experts to tackle the smoke pollution.

<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 yellow background form turn it in before you  
leave today)*

# **COURSE LOGISTICS**

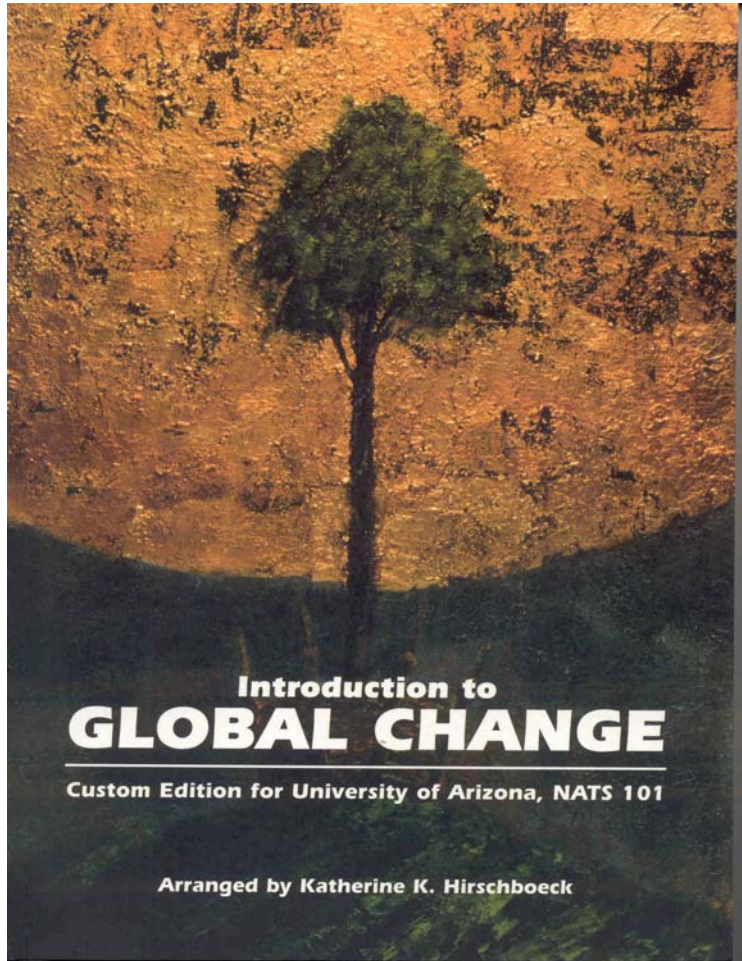
# COURSE LOGISTICS

## *Required* **TEXTBOOK**

Begin reading Chapter 1  
now. . .

NOTE: assigned readings are listed  
on the Reading Assignments  
Schedule. Find it in the Syllabus  
handout & on the course webpage.

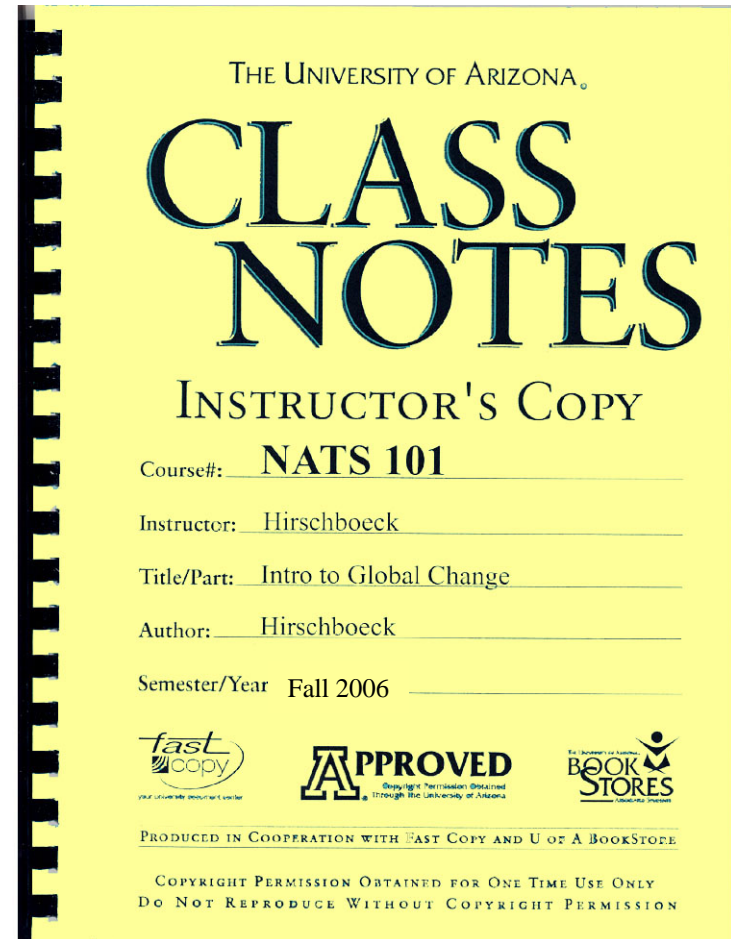
Also see the weekly D2L Checklist.



# COURSE LOGISTICS

. . . Plus a  
**CLASS NOTES  
PACKET**  
available in the  
ASUA bookstore.

Should be available by  
**THURSDAY**; needed for  
in-class use every class.  
Bring it with you to our  
next class if you can get  
it by then!



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

# **COURSE LOGISTICS**

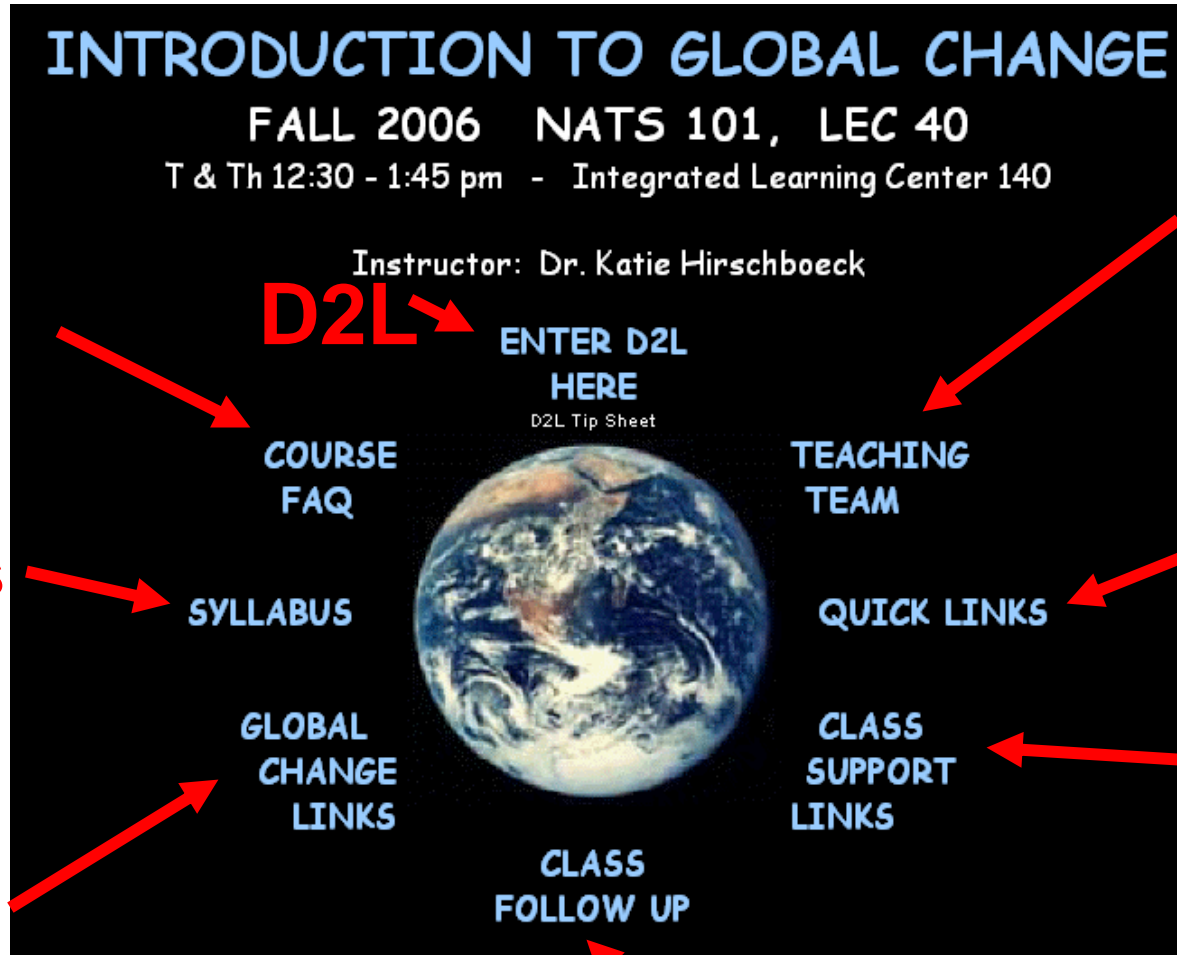
## **Homework / On Your Own:**

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

# COURSE LOGISTICS

NATS 101-GC Website:

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



**FAQ**

**D2L**

**Teaching Team**

**Quick Links**

**Class Support Links**

**Class Follow Up**

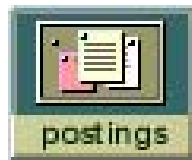
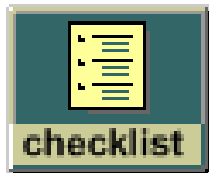
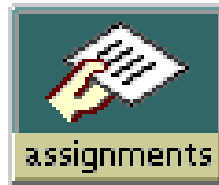
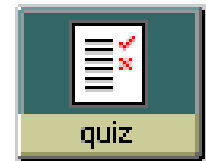
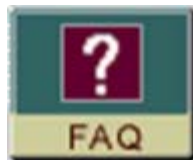
**Syllabus**

**Global Change Links**

# 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**

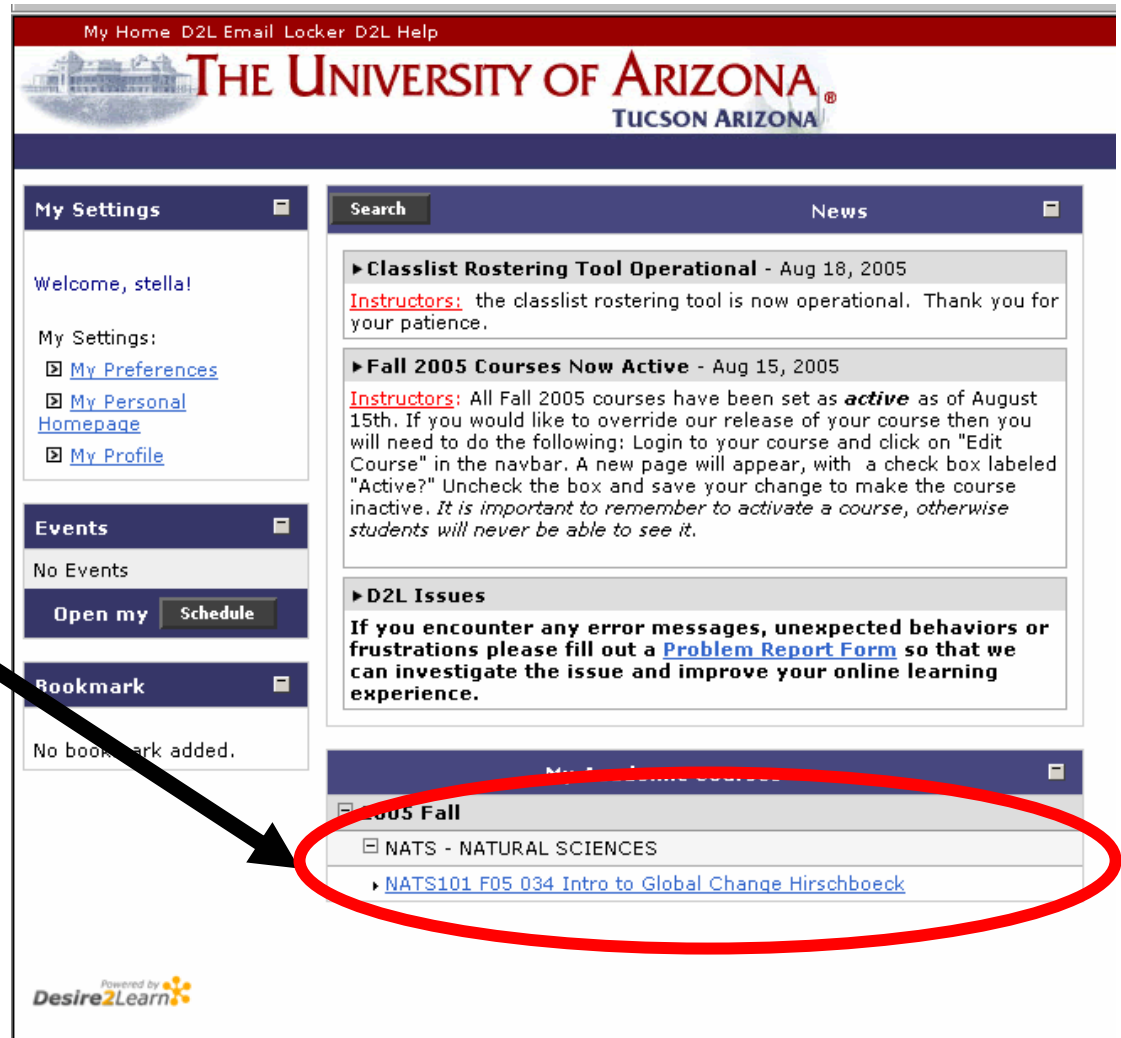
**ANNOUNCEMENTS:**

**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 [Schedule](#)

**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.

**My Learning Courses**


- **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**

- [New D2L Email Messages](#)
- [New Dropbox Submissions](#)
- [Unread Discussion Messages](#)
- [Ungraded Quiz Attempts](#)
- [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 Tests](#)

 [RQ's](#)

 [Study Guides](#)

At right are the tools we'll be using most often this semester. Other D2L tools (Grades, D2L Email, etc.) are in the red & blue navigation bars above.

[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



D2L  
Email

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)*

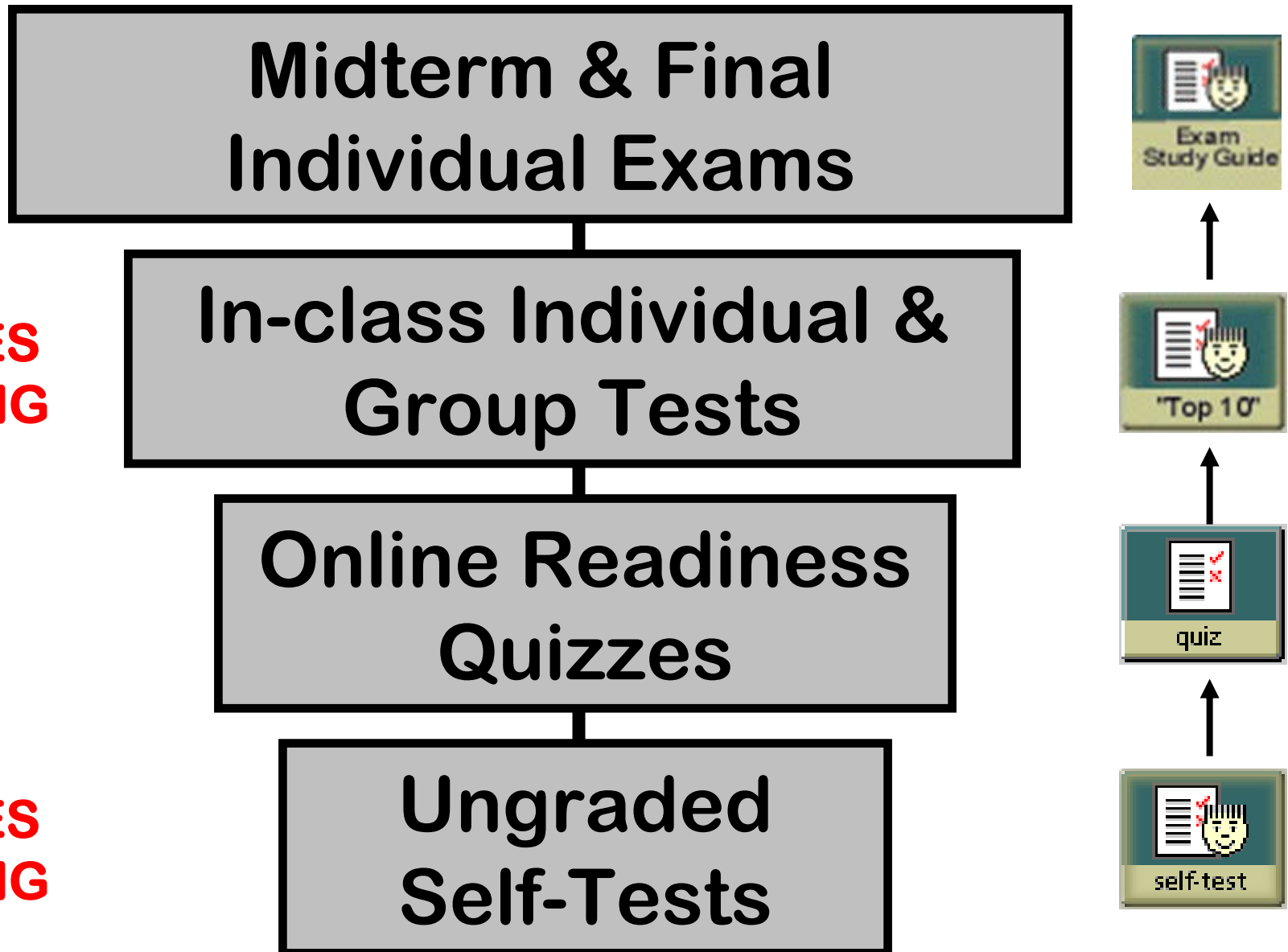
The image shows the main content area of the NATS 101 D2L course homepage. It has a green header with "Search" and "News" buttons. Below the header is a section titled "NATS 101" with a large banner for "INTRODUCTION TO GLOBAL CHANGE". To the right of the banner are icons and links for "class website", "FAQ", "checklist", "Follow Up", "assignments", "self-test", "quiz", and "study guides". Below this is a section titled "LATEST NEWS:" with a welcome message from Dr. Katie Hirschboeck dated Tuesday Aug 22 at 12:30 pm in ILC rm 140. The message asks students to review the layout and visit the checklist tool.

Main  
NATS 101-GC  
Course Tools  
here

News &  
Announcements  
here

*Check this daily for the latest  
news about the class*

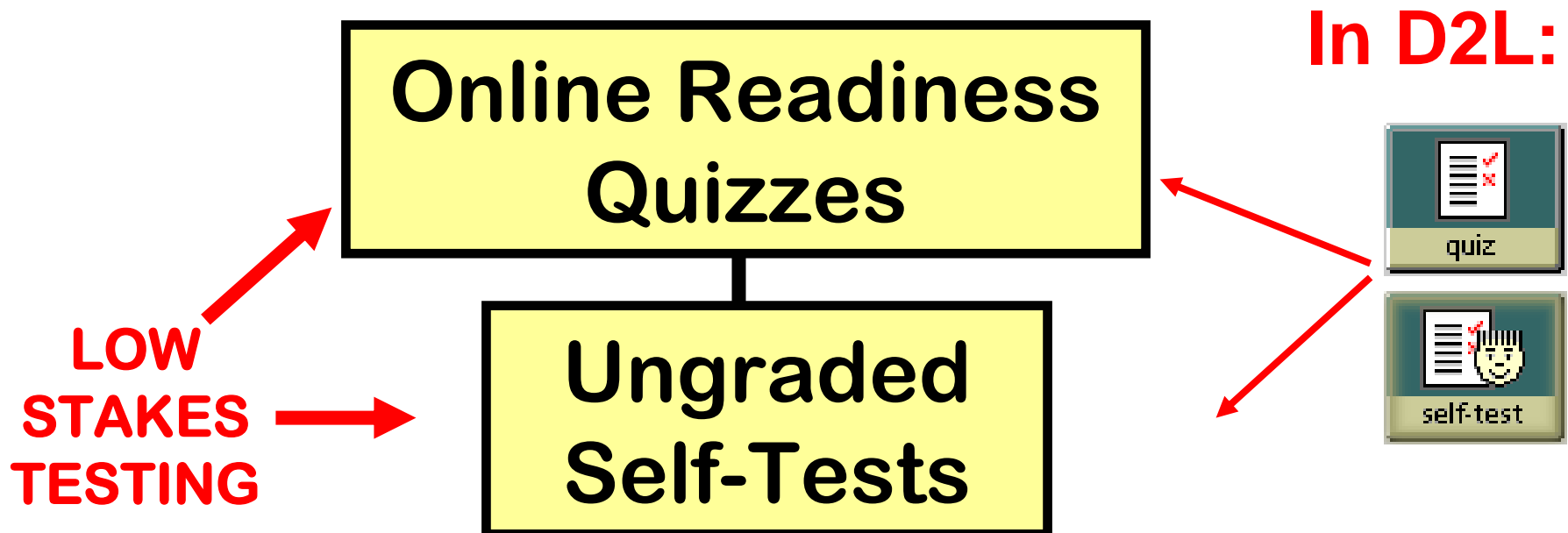
# Multi-Tiered Testing Approach:



# Multi-Tiered Testing Approach:

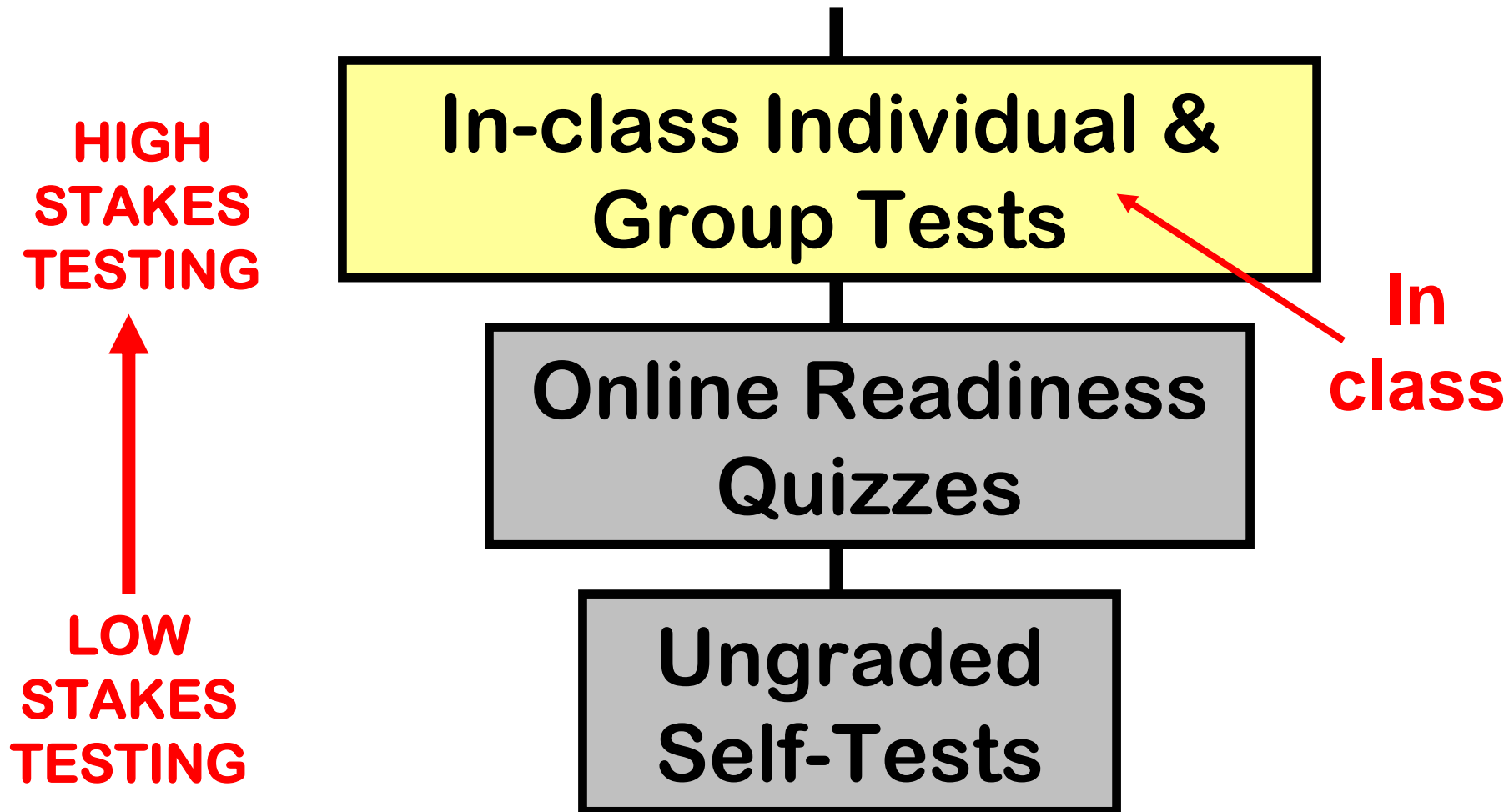
**START OUT WITH UNGRADED  
SELF-TEST & SHORT ONLINE QUIZ**

*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.**

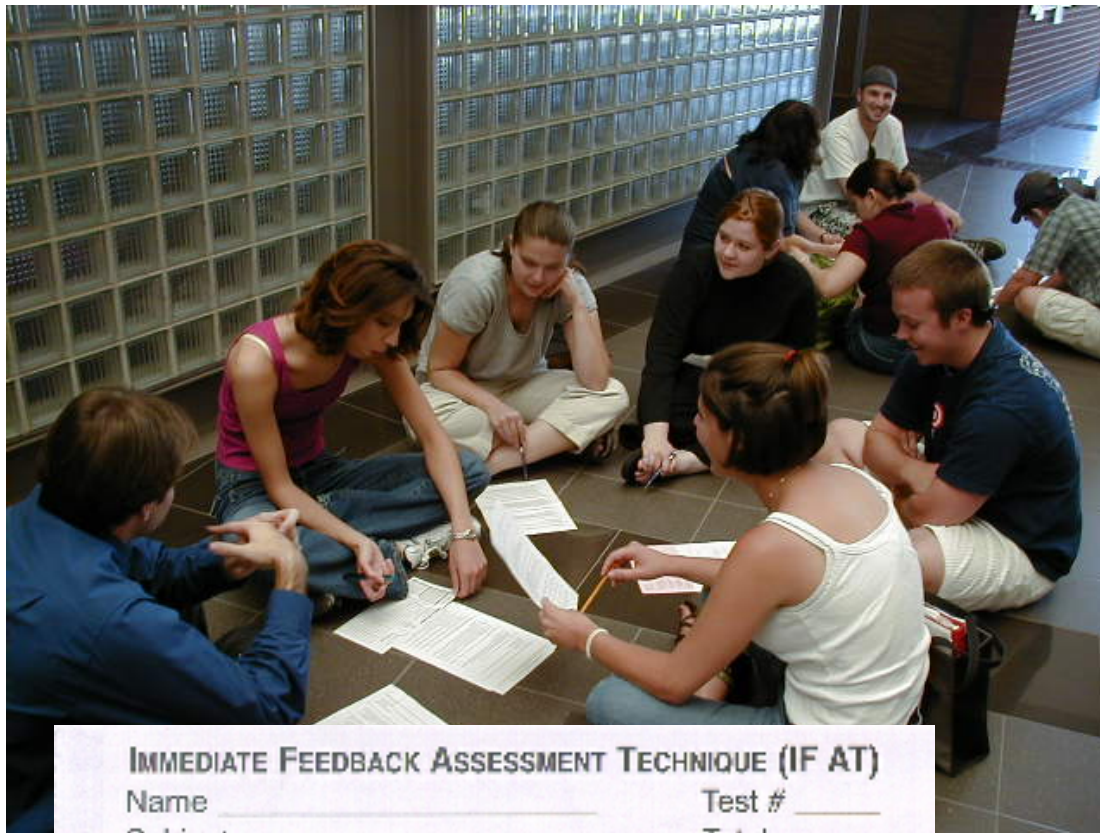
**Each question is worth 2 pts = 20 pts for the entire Individual Test.**

**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 # \_\_\_\_\_

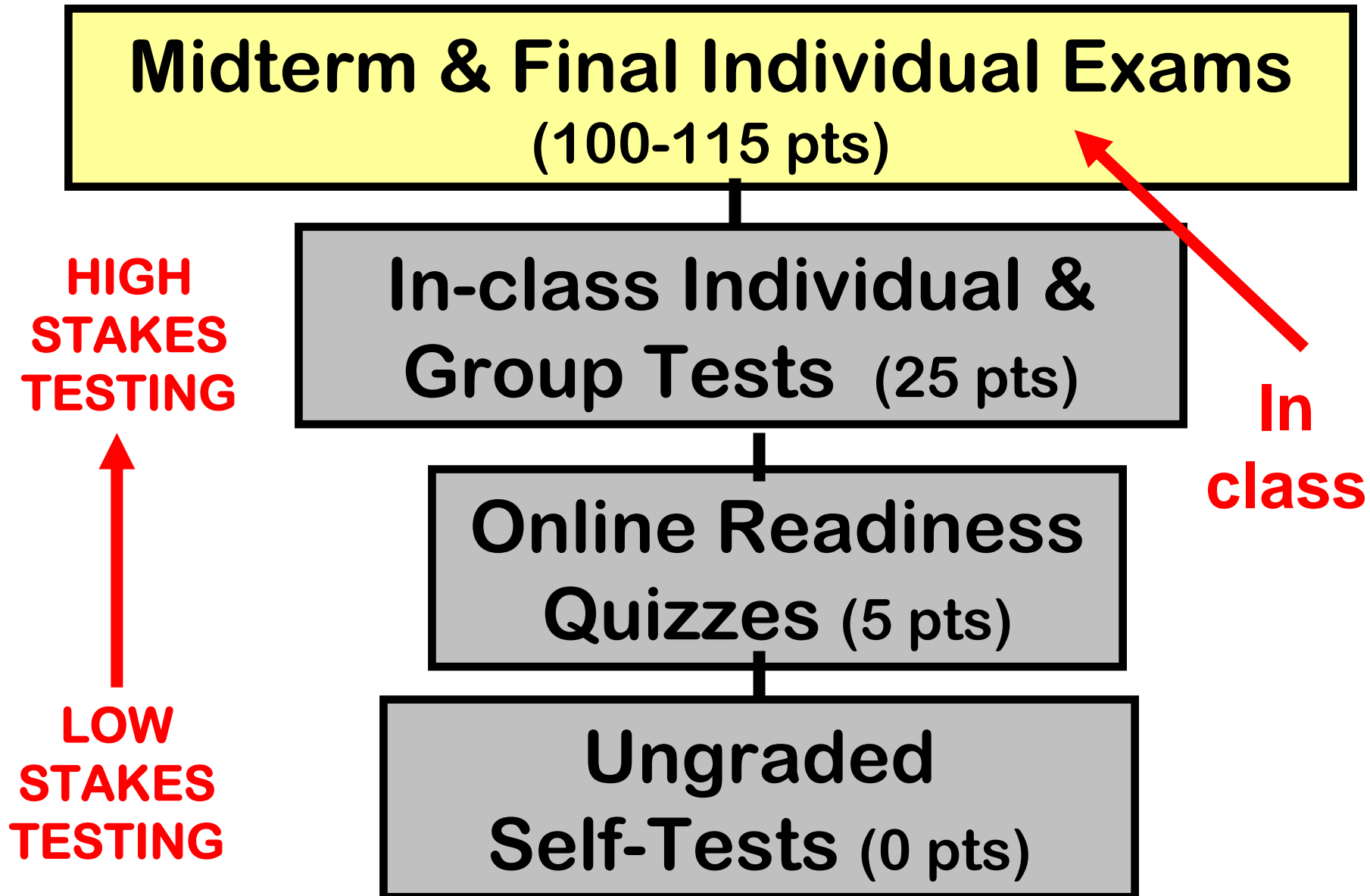
Subject \_\_\_\_\_ Total \_\_\_\_\_

**SCRATCH OFF COVERING TO EXPOSE ANSWER**

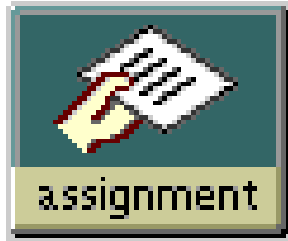
|     | A | B | C | D | Score |
|-----|---|---|---|---|-------|
| 1.  |   |   |   |   |       |
| 2.  |   |   |   |   |       |
| 3.  |   |   |   |   |       |
| 4.  |   |   |   |   |       |
| 5.  |   |   |   |   |       |
| 6.  |   |   |   |   |       |
| 7.  |   |   |   |   |       |
| 8.  |   | 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

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

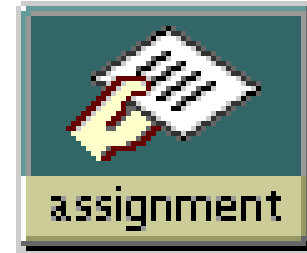
# Multi-Tiered Testing Approach:



# ABOUT ASSIGNMENTS:



**Group**  
(in class  
assignments)



**Individual**  
(homework  
assignments)

# GREENHOUSE EFFECT (GHE) UNDERSTANDING

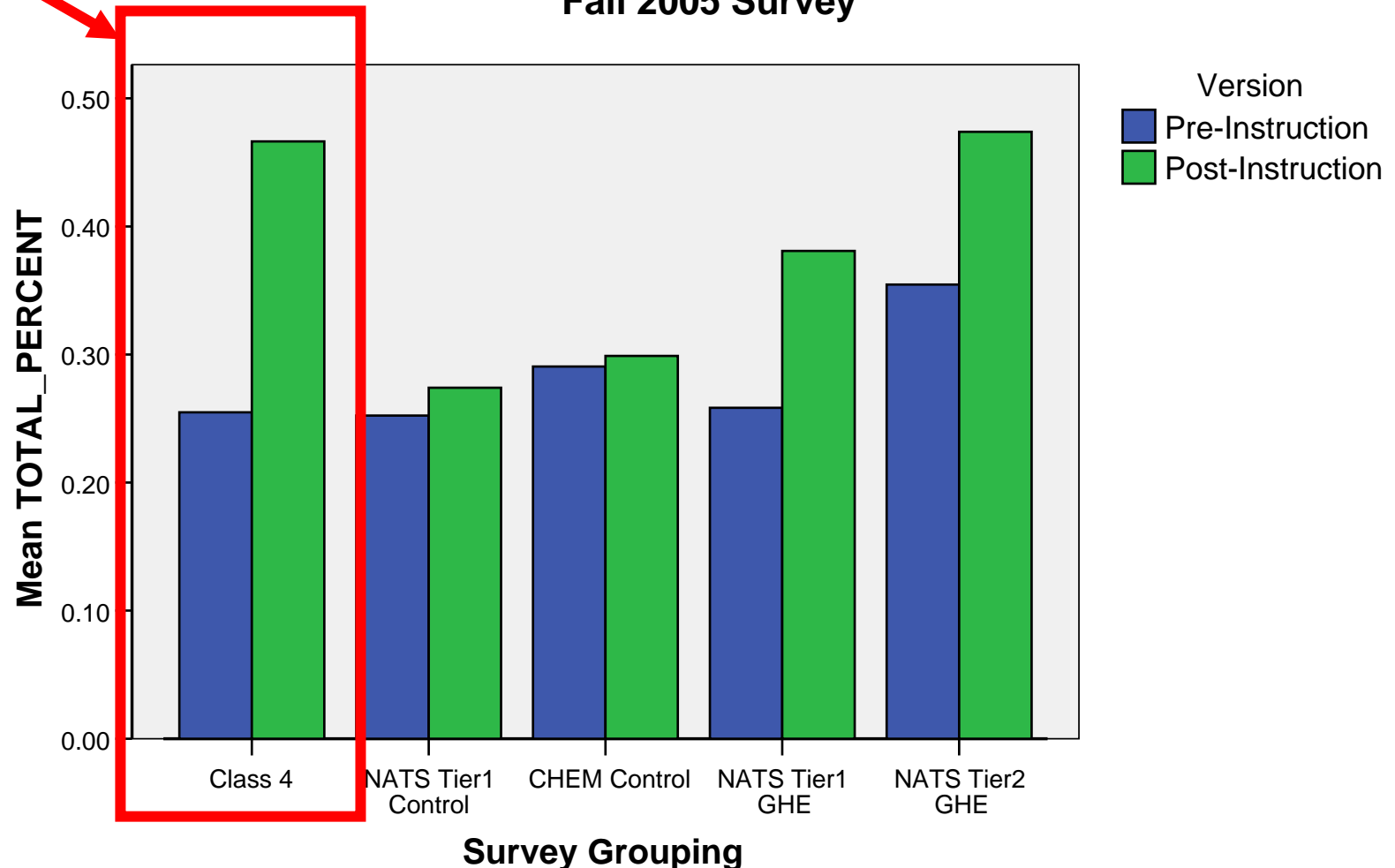
Class 4 = NATS 101. Sec 34 Fall 2005

Instructor: Katie Hirschboeck

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

**Pre- and Post-Instruction Means**

**Fall 2005 Survey**



# 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)



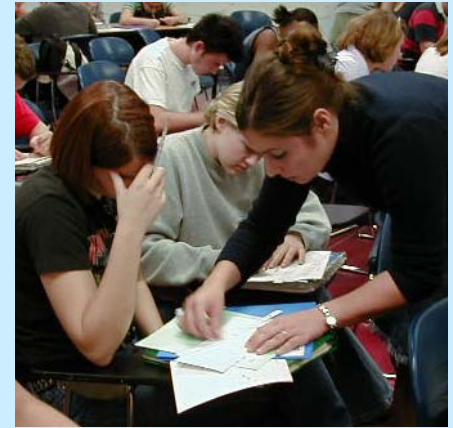
## Teaching Teams Program

*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 units of academic credit by enrolling in one of the following courses:

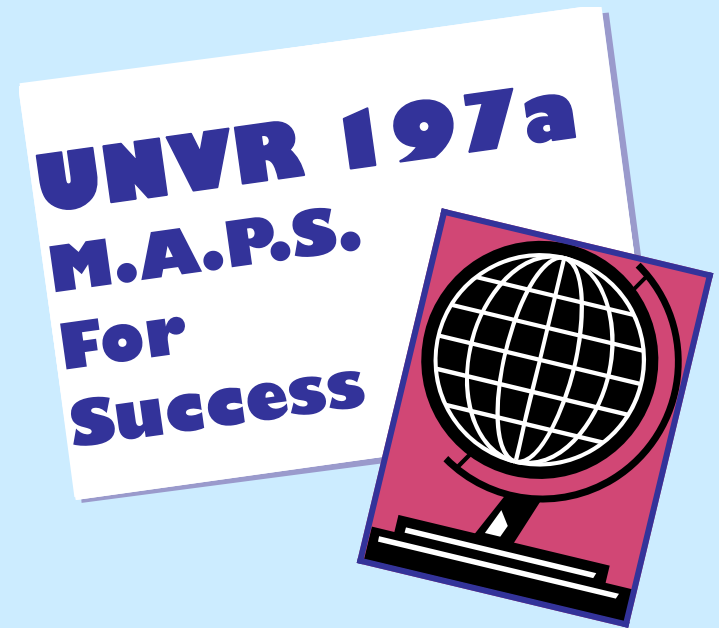
UNVR 197a: Preceptor Training (3 units)  
(for first-time preceptors)

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

**OR preceptors can receive HONORS  
CREDIT in NATS 101 as part of an  
HONORS CONTRACT . . .**

# UNVR 197a TRAINING WORKSHOP:

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



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

# UNVR 397a: Independent Study 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:



# CLASSROOM RULES & POLICIES



“ARIZONA IDOL”

<http://uanews.org/movies/idol.html>

**Some especially important**  
**“Dr. H” CLASSROOM POLICIES**  
**plus, see the 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 - permission granted for special circumstances (see Dr H).**
- 4. Refrain from conversations with your classmates during lectures, presentations, videos, etc.**
- 5. No food or drink (except in closed containers) in ILC.**

# Your 1st ASSIGNMENT:

Here are your first assigned tasks:

1. Familiarize yourself with our D2L course site.
2. Read & study the **Syllabus** and the **online FAQ** (Frequently Asked Questions) **Then take SELF TEST ST-A and Practice Readiness Quiz RQ-A to test your understanding of the course logistics & policies.**
3. Get your copy of **CLASS NOTES** as soon as you can this week & bring it to class on Thursday if it is available by then. To prepare for Thursday's class, **READ pp 11-16 on Science in CLASS NOTES.**
4. **READ** the short essay "**On Science**" by Robert Pirsig **before class on Thursday 8/24** -- available on the NATS 101-GC webpage under **QUICK LINKS** in a pdf file – the **PASSWORD** is: **nats101gc**

# **IMPORTANT ANNOUNCEMENTS (cont.)**

**Disability Resource Center (DRC)** students & **SALT students** – make an appointment (via email) in the next two weeks with Dr. H so she can meet you.

**Trying to ADD the class?**

**Interested in picking up Preceptor materials?**

See Dr. H after class is dismissed to discuss this.

# CLASS DISMISSED 😊



class website

[To NATS 101-GC website](#)