

GEOG 1115: SEEKING SUSTAINABILITY
Strategies to Examine, Understand, Change, and Save the World

COURSE INFORMATION

Credit Hours: 3
Requirements: None
Primary Audience: All are welcome
Prerequisites: None

Location: New Classroom Building (NCB) 120
Meeting Times: 9:30am-10:45am T, Th

INSTRUCTOR CONTACT INFORMATION

Name: Dr. Tim Baird
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Office Location: CID, Office 207
Office Hours: Thursdays 2-4pm, or by appointment

TEACHING ASSISTANT CONTACT INFORMATION

Name: Millie Mackie
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Office Hours: by appointment

(CONTACT MILLIE WITH YOUR QUESTIONS ABOUT READING AND READING NOTES)

COURSE DESCRIPTION & GOALS

Sustaining the world's interconnected environmental, social, and economic systems is arguably among the most pressing challenges humans face. But sustainability problems can be difficult to understand precisely because so many things are connected, interacting, and changing at once. **This course starts from the premise that complex problems are understandable – not because they are simple, but because there are strategies for thinking about them.**

Our strategy will be to **separate and then integrate**. We will first examine environmental, social and economic systems individually, learning to recognize their components, interactions, and functions across scales. Along the way, we will consider how species interact in food webs, how people are connected through social networks, how goods and resources move through economies, and how they systems change over time. At the midpoint of the semester, we will bring these systems back together and confront the messiness that results when environmental, social, and economic phenomena are all roiling together.

From there, we will develop strategies for making sense of that complexity. In particular, we will use ideas from complex adaptive systems theory to examine how systems changes, how disturbances propagate through networks and across scales, and how diversity, resilience and adaptation shape what happens next. Throughout the semester, we will use perspectives and methods from the social sciences to examine how people, groups, institutions, values, beliefs, and cultures both shape – and are shaped by – the systems of which they are a part. This will require us to encounter perspectives and experiences different from our own and to consider sustainability challenges from multiple cultural and global perspectives.

Ultimately, this course is not intended to give you a list of answers about sustainability. **It is intended to help you get better at making sense of a complicated and constantly changing world.** That requires practice: reading carefully, asking good questions, making connections, struggling with difficult ideas, listening to other people, changing your mind, and communicating what you think. The sustainability heavyweights who will do the ground-breaking stuff are still taking college classes. Maybe you're one of them.

By the end of the course, students should be able to:

1. **identify and apply** key concepts and strategies from the social sciences to make sense of complex sustainability challenges;
2. **describe and analyze** the components, interactions, and functions of environmental, social, economic, and integrated complex adaptive systems;
3. **identify and analyze** interconnections among individuals, groups, institutions, and systems, including how these connections operate across scales;
4. **analyze** how values, beliefs, and cultural perspectives shape human behavior, social relationships, and understandings in sustainability;
5. **analyze** how diversity, disturbance, resilience, and adaptation influence the behavior and change of complex systems;
6. **interpret** experiences, problems, and perspectives from one's own worldview and from worldviews different from one's own;
7. **create and support** arguments about complex sustainability challenges using evidence, concepts, and perspectives from the course; and
8. **apply** strategies for thinking critically, creatively, and collaboratively, and for communicating ideas effectively.

I also think becoming a peace-loving trouble-maker would be a positive outcome.

COURSE MATERIALS

No Required Text – I'm providing you with scanned readings, links, etc.

INSTRUCTIONAL METHODS

Class periods will involve discussion of readings, small-group activities and problem solving, interactive lecture, and occasional short videos. We will regularly practice applying course ideas to new problems and situations – sometimes before we actually know how to solve them.

READING & CLASS PARTICIPATION

For this course, reading and class participation are inextricably related. Most of our class periods will build directly from the assigned reading, so you will get much more out of class when you arrive having done the work. But there is another reason the reading matters: **this is where you get your reps.** Reading carefully, wrestling with questions, making connections, and putting ideas into your own words are ways you practice thinking. Like most things worth getting good at, this takes time and effort. The goal is not simply to arrive at an answer; it is to get better at doing the work that produces one.

Prior to most class periods I will provide a set of questions to help guide you through the assigned reading. Please answer these questions as you read and submit your response through Canvas before class. These reading notes are not intended primarily to test whether you can find the “right” answer. They are an opportunity to practice: to make sense of unfamiliar ideas, identify what matters, make connections, and putting your thinking into words. I am looking for evidence that you have engaged earnestly and thoughtfully with the reading and the questions. You will receive a 100% for this work if you answer all the questions earnestly. You will not lose points simply because you struggled with something or got something wrong. Struggle is part of the work. Answers do not need to be long – a few sentences will suffice for full credit. **11 points will be deducted for each day that questions are handed in late – up to a maximum of 35 points deducted.** Exceptions will be made only in extreme circumstances. This is not intended to be punitive, but to encourage timely completion of the reading and quality preparation for class discussion.

In order to create a good climate for everyone to participate, please follow these discussion guidelines:

- *Be ready to share and explain your ideas. Feel free to disagree with others, but be specific in your own assertions and back them up with evidence.*
- *Listen carefully and respond to other members of the group. Be willing to change your mind when someone demonstrates an error in your reasoning or use of facts.*
- *Do not hesitate to ask for clarification of any point or term that you do not understand.*
- *Make your point succinctly, avoid repetition, and stick to the subject.*

The reading for this course will include magazine and journal articles, selections from books, textbooks, and web links. It is important that you do the readings before the appropriate class periods. Plan ahead so that you will not get behind. PDFs of readings or links to sources on the internet can be found on Canvas. Also links to internet readings are provided on the syllabus.

COURSE EVALUATION

Ultimately, I hope you will evaluate your experience in this course by asking: “Did I learn anything in this class? Was it worth the effort?” An inquiring attitude and an active imagination will help you recognize the relevance of course topics to your life and enhance your enjoyment of, and success in, this class. **Your grade will reflect both the work you put into practicing these skills and your ability to apply them.**

Instructor (and self) evaluation will reflect performance on:

Reading notes	35%
Daily REPs	15%
Midterm exam	18%
Pink Time (self-evaluation)	10%
Final exam	22%
Final grade	100%

Reading notes: please see *READING & CLASS PARTICIPATION* section above.

Daily REPs (Reading/Engagement Prompts): We will begin most class periods with a short, in-person Daily REP. These prompts are designed to encourage two simple habits that will help you succeed in this course: **do the reading and show up**. Most REPs will include four basic questions about that day’s reading. They are not intended to be tricky; if you have done the reading and worked through the reading notes, you should be well prepared. A REP is worth 4 points: students who are present and answer at least 3 of the 4 questions correctly will receive full credit; 2 correct answers earns 3.5 points; and 0-1 correct answers earns 2.5 points. Students arriving late (after the REP) earn 2 points. Because the REP also records attendance, students who are absent receive a zero.

REP Performance	REP Score
Present + 3 to 4 correct	4
Present + 2 correct	3.5
Present + 0-1 correct	2.5
Late (arriving after REP)	2
Absent	0

Life happens. Accordingly, I will drop your **four lowest Daily REP scores** at the end of the semester. These drops are intended to cover ordinary illnesses, appointments, travel, oversleeping, lousy days, and other occasional disruptions of life. **If you miss class for any of these reasons, you do not need to**

email me or explain your absence; the missed REP will simply count as one of your four dropped scores. Think of these four drops as built-in flexibility, not four absences you need to save.

If you experience circumstances that warrant an official **Absence Verification from the Virginia Tech Dean of Students**, complete the absence verification form on the [Dean of Students website](#). I will receive an email from them and excuse the associated missed REP rather than count it among your four drops. For circumstances serious or prolonged enough to require additional flexibility, we will handle those individually.

Exams: Exams are where you will have the opportunity to put the pieces of the course together. **You will know the primary exam questions well in advance – in some cases, almost from the beginning of the semester.** The challenge is not to guess what I will ask, but to use our readings, discussions, activities, and reading notes to develop increasingly sophisticated answers. Exams will ask you to make connections, develop arguments, and use specific evidence from across the course to support them. They will be open book and open notes. This does not mean that the exams will be easier – memorization is not the point. I will be looking for clear, organized, convincing arguments that demonstrate your ability to make sense of the complex systems we have studied. One more thing – you must work in a group of 4 or 5. It sucks – I know.

Pink Time: Based on research compiled by Daniel Pink (*see Drive, 2011*), we will conduct a bit of an experiment in this course. For a portion of the semester – essentially two weeks, including personal time and class time – I will give you the authority and freedom to pursue something that interests you, something you want to learn about, or something you want to develop. The only caveat is that you will need to share what you've done with the group.

The larger purpose is to experiment with what it means to take responsibility for your own learning. Much of this course asks you to practice skill and wrestle with ideas that I have selected for you. Pink Time turns that arrangement around: **you choose what you want to get better at, decide what kinds of practice and effort that will require, and evaluate your own progress.** In other words: skip class, do whatever you want, and give yourself a grade. Let me explain.

On two days that would normally have regular reading assignments, we won't. Instead, you will have free days to pursue your own learning. My expectation is that you devote approximately the usual class time (1.25 hours) plus homework time (1.75 hours) – about three hours total – to doing something, either by yourself or with others. On the class day following each Pink Time day, we will come back together to share what we did, what happened, and what we learned. These efforts constitute 10% of your final grade, and you will have the authority to grade yourself.

GENERAL EDUCATION - PATHWAYS ASSESSMENT GOALS & PLAN

This course is part of Virginia Tech's Pathways General Education Curriculum, which promotes broad learning across disciplines and complements the deeper disciplinary learning students pursue within their majors. Pathways courses address specific learning outcomes and indicators, which Virginia Tech uses to assess student learning across the curriculum. This course addresses two Pathways learning outcomes: **(1) Reasoning in the Social Sciences** and **(2) Intercultural and Global Awareness**. The indicators associated with these outcomes are listed below.

Outcomes

Reasoning in the Social Sciences

Indicators

1. Identify fundamental concepts in social sciences.
2. Identify interconnections among and differences between social institutions, groups, and individuals.

3. Analyze the ways in which values and beliefs relate 2 human behavior and social relationships.

Intercultural and Global Awareness

1. Identify advantages and challenges of diversity and inclusion in communities and organizations.
2. Address significant global challenges and opportunities in the natural and human world.

The instructor and teaching assistant will assess students' competencies (e.g., below competent, competent, above competent) for these indicators based on students' completed work on reading notes and exams, specifically work related to these specific indicators. This assessment will be relayed to the VT Office of Assessment & Evaluation, which will compile data for all courses contributing to each learning outcome. Student identities will not be known by anyone besides the instructor and teaching assistant.

AI POLICY

This course is about learning. Learning requires practice: reading carefully, wrestling with ideas, trying to make connections, putting thoughts into words, getting things wrong, reconsidering them, and trying again. Much of the work I ask you to do in this course is designed to give you opportunities to practice these skills. **Getting an answer and doing the work required to arrive at an answer are not the same thing.**

Generative AI is an increasingly powerful and useful tool, and you are welcome to use it in this course **when it supports your learning rather than substitutes for it**. You might use AI to clarify something you don't understand, ask follow-up questions about an idea, receive feedback on something you have already written, or explore a question beyond what we have done in class. When you use AI for an assignment, acknowledge that use in detail.

What you may **not** do is use AI to perform the intellectual work an assignment asks you to practice. Do not feed a reading or assignment into an AI tool and submit its answers as your own. Do not use AI to write responses that you were asked to develop yourself. Passing AI-generated work off as your own violates the Honor Code.

There will sometimes be ambiguity here. A tool that helps one student learn may allow another student to avoid learning. **When in doubt, ask yourself: Am I using this tool to help me do the work, or to avoid doing the work?** If you're still unsure, ask me.

One consequence of this policy is that the easiest way to succeed in this course may sometimes be surprisingly old-fashioned: **read, think, write, show up, talk with other people, and get your reps in**. You are spending considerable time, money, and energy on your education. Don't outsource the part you came here to develop.

HONOR CODE

The Undergraduate Honor Code pledge that Virginia Tech undergraduate students must abide by states:

"As a Hokie, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Students enrolled in this course are responsible for abiding by the Undergraduate Honor Code on each assignment and exam. A student who has doubts about how the Honor Code applies to an assignment – including questions about appropriate use of generative AI – is responsible for obtaining specific guidance from me before submitting the assignment for evaluation. Ignorance of the rules does not exclude any member of the University community from the requirements and expectations of the Honor Code.

For additional information, please consult the [Virginia Tech Undergraduate Honor System](#).

USE OF INFORMATION PROVIDED IN THIS COURSE

Course materials are provided for the personal use of students enrolled in this course. These materials – including reading notes, handouts, slides, exams, assignments, assessments, and materials posted on Canvas – may not be shared, posted, sold, distributed, or otherwise made available outside the course without my permission. This includes uploading course materials to websites, study-resource services, generative AI systems, or other platforms that may store, reproduce, or make those materials available to others. You are, of course, welcome to use course materials for your own learning.

HOW TO SUCCEED IN THIS COURSE

- *n-gauge in the class.*
- *Keep up with the readings*
- *Do the work. Get your reps in.*
- *If something is not clear, ask a question.*
- *Clarify expectations with the Professor.*

COURSE SCHEDULE

ACT 1: SEEING (the struggle)

Week 1 -----

AUG 25 (T): INTRODUCTION TO THE CLASS

AUG 27 (Th): THE VALUE OF VALUES

Reading: Christopher Ketcham (2008) “They Shoot Buffalo, Don’t They: Hazing America’s Last Wild Herd” Harper’s Magazine **316**(1897): 66-74.

Week 2 -----

SEP 1 (T): WHAT’D HE SAY?

Reading: Bryan G. Norton (2005) “An Innocent at the EPA” Sustainability: A Philosophy of Adaptive Ecosystem Management. 1-44.

SEP 3 (Th): VALUES & STRATEGIES: A MEMOIR

Reading: No reading – just thinking, then writing.

(Introduce Pink Time)

Week 3 -----

ACT 2: CONNECTING – Scene 1. Environmental Systems

SEP 8 (T): MUD WRESTLING

Reading: David R. Montgomery (2007) “Good Old Dirt” and “The Skin of the Earth” in Dirt: The Erosion of Civilizations. 1-26.

SEP 10 (Th): ALIEN INVASIONS & TROPHIC CASCADES

Reading: David Quammen (1996) “Rarity Unto Death” in The Song of the Dodo: Island Biogeography in an Age of Extinctions. 329-344.

Week 4 -----

SEP 15 (T): EVOLUTION & RIPPED GENES

Reading: Simon Levin (1999) “The Nature of the Environment” in Fragile Dominion: Complexity and the Commons. 17-38.

(Model Pink Time)

ACT 2: CONNECTING – Scene 2. Social Systems

SEP 17 (Th): “TRADITIONAL” SOCIAL NETWORKS

Reading: Tepilit Ole Saitoti (1986) “Growing up as a Herder,” “My Mother,” “Naikosiai and I,” “Man of the Serengeti,” “Nairobi” & “The First Takeoff” in The Worlds of a Maasai Warrior. 3-24, 95-111.

Week 5 -----

SEP 22 (T): THOUGHTS ON SOCIAL CONNECTIONS

Reading: Albert-László Barabási (2003) “Introduction,” “The Random Universe,” and “Small Worlds” in Linked: How Everything Is Connected to Every Else and what it means for business, science, and everyday life. 1-24, 41-54.

SEP 24 (Th): SOCIALITY AND INFORMATION EXCHANGE

Reading: Steven Johnson (2008) “Author’s Note” and “The Electricians” in The Invention of Air. xvii-xx, 15-61.

Week 6 -----

ACT 2: CONNECTING – Scene 3. Economic Systems

SEP 29 (T): THE EARLIEST ECONOMIES

Reading: Jared Diamond (1999) “Farmer Power” and “To Farm or Not to Farm” in Guns, Germs and Steel: The Fates of Human Societies. 85-92, 104-113.

MIDTERM EXAM HANDED OUT

OCT 1 (Th): MERCANTILISM IN THE COLONIES

Reading: William Cronon (1983, 1996) “Bounding the Land” and “Commodities of the Hunt” in Changes in the Land: Indians, Colonists, and the Ecology of New England. 54-108.

Week 7 -----

OCT 6 (T): THE SUPER-MARKET: GLOBAL COMMERCE

Reading: Sarah Murray (2007) “The Business of Bones” and “Cannon Fodder” in Moveable Feasts: From Ancient Rome to the 21st Century, the Incredible Journeys of the Food We Eat. 20-55.

OCT 8 (Th): EXAM WORK DAY **(EXAM DUE FRIDAY 10/9, 11:53pm)**

Week 8 -----

ACT 3: SENSE-MAKING (amidst struggle)

OCT 13 (T): PEOPLE HEART PLANTS. WHAT DO YOU HEART?

Reading: Michael Pollan (2001) “The Human Bumblebee” and “Beauty and the Tulip” in The Botany of Desire: A Plant’s Eye View of the World. xiii-xxv, 59-110.

OCT 15 (Th): NO CLASS - SKIP **(Pink Time 1)**

Week 9 -----

OCT 20 (T): IN CLASS - SHARE **(Pink Time 1)**

OCT 22 (Th): CORN FLAKES AND COUP D'ETATS

Reading: Dan Koeppel (2008) "The World's Most Humble Fruit" and "Corn Flakes and Coup D'Etats" in Banana: The Fate of the Fruit That Changed the World. xii-xix, 51-70.

Week 10 -----

OCT 27 (T): COMPLEX ADAPTIVE SYSTEMS

Reading: F. Stuart Chapin, Gary P. Kofinas & Carl Folke (eds) (2009) "A Framework for Understanding Change" in Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World. 3-12, 14-18, 23-25.

OCT 29 (Th): THE GREAT PLAINS CASE

Reading: Wil S. Hylton (2012) "Broken Heartland: The looming collapse of agriculture on the Great Plains" Harper's Magazine **325** (1946): 25-35.
<http://www.harpers.org/archive/2012/06/hbc-90008690>

Week 11 -----

NOV 3 (T): FLEX DAY

Reading: pending

MIDTERM EXAM DISCUSSION

ACT 4: PRACTICING

NOV 5 (Th): CONGRATULATIONS... YOU HAVE THE WRONG NUMBER

Reading: Tim Baird, Emily Woodhouse & Terry McCabe (2021) "Wrong number? Let's chat' Maasai herders in East Africa use misdials to make connections" on THE CONVERSATION <https://theconversation.com/wrong-number-lets-chat-maasai-herders-in-east-africa-use-misdials-to-make-connections-156167>

Week 12 -----

NOV 10 (T): STEREOTYPES IN THE AIR

Reading: Claude M. Steele (2010) Readings (incl. Introduction) from Whistling Vivaldi.

NOV 12 (Th): NO CLASS – SKIP **(Pink Time 2)**

Week 13 -----

NOV 17 (T): IN CLASS – SHARE **(Pink Time 2)**

NOV 19 (T): TV RULES

Reading: Steven Johnson (2005) "The Sleeper Curve" & "Television" in Everything Bad Is Good For You. xii-xiv, 1-14, 62-115.

Week 14 -----

NOV 24 (T): THANKSGIVING BREAK
NOV 26 (Th): THANKSGIVING BREAK

Week 15 -----

DEC 1 (T): ONE FLU OVER THE CUCKOO'S NEST
Reading: David Quammen (2012) Chapters 113-15 in Spillover. 503-520.
DEC 3 (Th): BOOMERANG GENERATION – HI MOM, I'M HOME
Reading: Katherine Newman (2012) "Introduction" and "Why are Accordion Families Spreading?" in The Accordion Family: Boomerang Kids, Anxious Parents, and the Private Toll of Global Competition. ix-xxiii, 37-62. 4

Week 16 -----

ACT 5: REFLECTING

DEC 8 (T): SAYS WHO? I DON'T BELIEVE IT!
Reading: Pascal Diethelm and Martin McKee. (2009). "Denialism: what is it and how should scientists respond?" European Journal of Public Health **19** (1): 2-4.

REVIEW AND FINAL EXAM HANDED OUT
FINAL EXAM DUE: MONDAY, 12/14/26 @ 10AM