**PRACTICING SUSTAINABILITY (GEOG 4444)**

 **INSTRUCTOR:** Dr. Eranga Galappaththi | Geography | eranga@vt.edu | 223 Wallace Hall

**TIME AND LOCATION:** Monday | 4:00-7:00 pm | Wallace 234

**OFFICE HOURS:** By appointment

**TEACHING ASSISTANTS:** Indunil Dharmasiri (indunil@vt.edu) | Sithuni Mimasha (sithunimimasha@vt.edu)

Team leaders:

Group A: Ellie Anderson

Group B: Caroline Witte

Group C: Hannah Garbutt

Group D: Emma Babiec

**COURSE DESCRIPTION**

The concept/process of sustainability is perpetually evolving and has gained critical attention in virtually all spheres of operation—from the private sector to governments and nonprofits; from the individual project scale to the organization and programmatics of transnational corporations; and from the way we live our daily lives to how collective societal actions impact global dynamics. Furthermore, depending on the institution, practitioners may be concerned with environmental impacts, public perceptions, employee motivation, student retention, cost recovery, fundraising, securing volunteer staff, and the list goes on. Given such diversity in sustainability applications and scales, this course aims to: (1) engage an inclusive and adaptive definition of sustainability; (2) introduce students to a breadth of literature on sustainability in its myriad forms; and most importantly (3) prepare students to practice sustainability by engaged in and critique on ongoing sustainability efforts. Finally, this is a student-led action course that requires dialogue, debate, feedback, and commitment—you, the students, are in charge of this course!

**LEARNING OBJECTIVES**

Upon successful completion of this course, students will be able to:

**1.** Dissect and think critically on the concept and process of sustainability from multiple perspectives (active participation & guest speakers);

**2.** Explain, evaluate, and make suggestions on sustainability actions across sectors (e.g., photovoice & group paper projects);

**3.** Apply project coordination and team management skills such as allocating responsibilities, time, and resources to ensure completion of projects (e.g., exhibition & website projects);

**4.** Prepare a written, oral, and graphic presentation defining a sustainability problem, outlining a solution, and evaluating its success (e.g., photovoice & website projects).

 **GRADING**

1. Active participation (5%) and guest speaker statements (10%): 15%

2. Photovoice project (15%) and presentation (5%): 20%

3. Fashion show project: 15%

4. Website project: 15%

5. Group paper project: 35%

**CLASSROOM CONDUCT**

***Attendance*:** Students are permitted one absence. After that, two absences decrease your final course grade by 3%, three absences result in a 6% reduction, and four absences result in an automatic F grade (since more than 1/4 of class sessions were missed).

 ***Late Policy***: Late work will be penalized by reducing the earned grade by 20% per day beginning at the time the assignment was due. Please reach out to the instructor with any extenuated circumstances to discuss your absence/s and options to make up for the missed content.

***Syllabus Updates:*** Changes to Syllabus are possible because of the action-oriented nature of this course. So this will be a living document.

 ***Honor Code***: The Undergraduate Honor Code pledge that each member of the university community agrees to 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 Honor Code. A student who has doubts about how the Honor Code applies to any assignment is responsible for obtaining specific guidance from the course instructor 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. Academic integrity expectations are the same for online classes as they are for in person classes. All university policies and procedures apply in any Virginia Tech academic environment. For additional information about the Honor Code, please visit: https://www.honorsystem.vt.edu/.

The Virginia Tech honor code pledge for all graded work is as follows: **“I have neither given nor received unauthorized assistance on this graded assignment.”** The pledge is to be written out on all graded assignments at the university and signed by the student. The honor pledge represents both an expression of the student’s support of the honor code and an unambiguous acknowledgment that the student has, on the assignment in question, abided by the obligation that the Honor Code entails. In the absence of a written honor pledge, the Honor Code still applies to an assignment.

***Diversity Statement***: Diversity and inclusivity enrich our lives and the University community. In this course, we respect our differences and reject all forms of discrimination, including but certainly not limited to those based on age, color, disability, gender, national origin, political affiliation, race, religion, socioeconomic status, and sexual orientation. Familiarize yourself with Virginia Tech’s Principles of Community and other relevant information at: *https://www.vt.edu/about/diversity/.*

***Accommodations***: Virginia Tech welcomes students with disabilities into the University’s educational programs. The University promotes efforts to provide equal access and a culture of inclusion without altering the essential elements of coursework. If you anticipate or experience academic barriers that may be due to disability, including but not limited to ADHD, chronic or temporary medical conditions, deaf or hard of hearing, learning disability, mental health, or vision impairment, please contact the Services for Students with Disabilities (SSD) office (540-231-3788, ssd@vt.edu, or visit www.ssd.vt.edu). If you have an SSD accommodation letter, please meet with me privately during office hours as early in the semester as possible to deliver your letter and discuss your accommodations. You must give me reasonable notice to implement your accommodations, which is generally 5 business days and 10 business days for final exams.

**COURSE SCHEDULE**

**Class 1 (Jan 23): Course introduction**

* Syllabus & course expectations
* Knowledge mapping activity: What we (don’t) know about sustainability?
* Survey (team building purposes)

**Class 2 (Jan 30): Sustainability basics and team building**

* Read 2 of the following:

- Bonevac, D. (2010). Is sustainability sustainable? *Academic Questions*, *23*(1), 84-101.

- Morelli, J. (2011). Environmental sustainability: A definition for environmental professionals. *Journal of environmental sustainability*, *1*(1), 2.

- Orr, D. W. (2002). Four challenges of sustainability. *Conservation biology*, *16*(6), 1457-1460.

- Seghezzo, L. (2009). The five dimensions of sustainability. *Environmental politics*, 18(4), 539-556.

- \*Clark, W.C., and Harley, A.G. 2019. Sustainability Science: Towards a Synthesis. Sustainability Science Program Working Paper 2019-01, John F. Kennedy School of Government, Harvard University, Cambridge, MA.

* Documentary and discussion: [TED](https://youtu.be/C6b3pQ8Tox0)

**Class 3 (Feb 6):** Expert guest speaker

* Dr. Kamran, Maryam **(Diversity, equity, and inclusion)**
	+ Readings:
	+ The one we watched:
	+ <https://www.southernexposurefilms.org/films/wastewater-a-tale-of-two-cities>
	+ The one we didn’t watch.
	+ <https://www.southernexposurefilms.org/films/conviction>
* **Eranga explains Photovoice assignment**
	+ Readings:
	+ Derr, V. & Simons, J. 2020. A review of photovoice applications in environment, sustainability, and conservation contexts: is the method maintaining its emancipatory intents? Environmental Education Research, 26:3, 359-380.
	+ Sarrica, M. & Brondi, S. 2020. Photovoice as a visual-verbal strategy for studying contents and processes of social representations: a participatory project on sustainable energy. Qualitative Research in Psychology, 17 (4), 565-586.
	+ Leung, M.M. et al. 2017. Voices Through Cameras: Using Photovoice to Explore Food Justice Issues With Minority Youth in East Harlem, New York, Health Promotion Practice, 18 (2), 211-220.
* Jarek Campbell: Exploring CNRE minors/majors (10-15m)

**Class 4 (Feb 13):** Expert guest speaker

* Dr. Jennifer Russell **(Is Circular Economy Sustainable?)**
	+ Readings:
	+ YouTube Video (13 min): [The "Circular Economy" is a Plot Against Humanity](https://youtu.be/u3OK2jMgKt0) (Lee Vinsel, from Virginia Tech) **\*Some swearing**
	+ Article: Russell, J., and Nasr, N. 2023. Value‑retained vs. impacts avoided: the differentiated contributions of remanufacturing, refurbishment, repair, and reuse within a circular economy, Journal of Remanufacturing, 13: 25-51.
	+ Article: Zink, T., and Geyer, R. 2017. Circular Economy Rebound, Journal of Industrial Ecology, 21 (3): 593-602.
* Christina Cilento **(Climate/energy solutions and policy)**
	+ Readings:
	+ On where we’re headed with climate change and what needs to be done to stop its worst effects:<https://www.wri.org/insights/ipcc-report-2022-mitigation-climate-change>
	+ On the role of individuals in responding to climate change:<https://www.sierraclub.org/sierra/yes-actually-individual-responsibility-essential-solving-climate-crisis>

**Class 5 (Feb 20):** Expert guest speaker

* Dr. Junghwan Kim **(Two research papers on sustainable transportation)**
* Readings:

-\*Kim, J., & Lee, B. (2023). Campus commute mode choice in a college town: An application of the integrated choice and latent variable (ICLV) model. *Travel Behaviour and Society*, *30*, 249-261. <https://doi.org/10.1016/j.tbs.2022.10.002> (\*you can skip the method section because it is too advanced)

-Kim, J., Rapuri, S., Chuluunbaatar, E., Sumiyasuren, E., Lkhagvasuren, B., Budhathoki, N. R., & Laituri, M. (2023). Developing and evaluating transit-based healthcare accessibility in a low-and middle-income country: A case study in Ulaanbaatar, Mongolia. *Habitat International*, *131*, 102729. <https://doi.org/10.1016/j.habitatint.2022.102729>

* Charlotte Aubrac **(Realized and elicited cooperation under water scarcity: evidence from a field experiment in Tanzania)**
* Readings:

-Barrett, S., & Dannenberg, A. (2012). [Climate negotiations under scientific uncertainty](https://www-pnas-org.proxy3.library.mcgill.ca/doi/abs/10.1073/pnas.1208417109). Proceedings of the National Academy of Sciences, 109(43), 17372-17376.

-Mdemu, M. V., Mziray, N., Bjornlund, H., & Kashaigili, J. J. (2017). [Barriers to and opportunities for improving productivity and profitability of the Kiwere and Magozi irrigation schemes in Tanzania](https://www-tandfonline-com.proxy3.library.mcgill.ca/doi/full/10.1080/07900627.2016.1188267). *International Journal of Water Resources Development*, *33*(5), 725-739.

**Class 6 (Feb 27):** Expert guest speaker

* Dr. Diana Burbano **(Biodiversity conservation, tourism, and resource-based livelihoods interactions in the Galapagos Islands, Ecuador)**
* Readings:

-Brewington, L. 2013. The Double Bind of Tourism in Galapagos Society, In S.J Walsh and C.F. Mena (eds.), Science and Conservation in the Galapagos Islands: Frameworks & Perspectives, Social and Ecological Interactions in the Galapagos Islands 1, Springer Science+Business Media, LLC 2013

-Gozalez, J.A, Montes, C., Rodriguez, J. and Tapia, W. 2008. Rethinking the Galapagos Islands as a Complex Social-Ecological System: Implications for Conservation and Management, Ecology and Society 13 (2): 13.

* Arielle King **(Environmental Justice and Sustainability: An historical overview)**
* Readings:

# -Engelman-Lado, M., Bustos, C., Leslie-Bole, H. & Leung, P. (2021). [Environmental Injustice in Uniontown, Alabama, Decades after the Civil Rights Act of 1964: It's Time for Action](https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/vol--44--no-2--housing/environmental-injustice-in-uniontown--alabama--decades-after-the/). American Bar Association, Human Rights Magazine, 44 (2), xxx-xxx.

# -Sengupta, S. (2020). [Black Environmentalists Talk About Climate and Anti-Racism](https://www.nytimes.com/2020/06/03/climate/black-environmentalists-talk-about-climate-and-anti-racism.html)

[It’s impossible to live sustainably without tackling inequality, activists say](https://www.nytimes.com/2020/06/03/climate/black-environmentalists-talk-about-climate-and-anti-racism.html). The New York Times, Climate.

**Class 7 (March 6): Spring Break 😊**

 **Class 8 (March 13):** Expert guest speaker

* § Aibek Samakov **(Sustainable agriculture in harsh environments? Local agricultural practices in Syr Darya Delta) \***violent/graphic content
* § Readings:

-Yang et al. 2020. Changes in area and water volume of the Aral Sea in the arid Central Asia over the period of 1960–2018 and their causes, Catena 191: 104566.

-Qadir et al. 2009. Salt-induced land and water degradation in the Aral Sea basin: A challenge to sustainable agriculture in Central Asia, Natural Resources Forum 33: 134-149.

* § Lauren Wustenberg **(Sustainability & the Agricultural System in the U.S. Farm Bill)**
* § Readings:

- Congressional Research Service, *Farm Bill Primer: What is a Farm Bill?,* <https://www.crs.gov/Reports/IF12047?source=search>

-Graddy-Lovelace, G., Diamond, A., Ichikawa, N.F. (2020). Contextualizing the Farm Bill: questions of food, land and agricultural governance. *Renewable Agriculture and Food Systems* 1-6.<https://doi.org/10.1017/S1742170520000125>

-Burchfield, E.K., Schumacher, B.L., Spangler, K., Rissing, A. (2022) The State of US Farm Operator Livelihoods. *Frontiers in Sustainable Food Systems*, 5:795901. doi: 10.3389/fsufs.2021.795901.

 **Class 9 (March 20): Photovoice presentations**

 **Class 10 (March 27):** Expert guest speaker

* Camilla Morrison **(Sustainability in theater and costumes)**
* Class activity: Make a costume out of trash or recyclables
* Eranga **(Introduction for Group paper project)**

**Class 11 (April 3):** Expert guest speaker

* \*Suellen da Costa Coelho **(Fashion and costume design)**
* Class activity: Make a costume out of trash or recyclables
* \*Eranga **(Group paper project)**
* § Readings:

-Berrang-Ford, L., Pearce, T., & Ford, J. D. (2015). Systematic review approaches for climate change adaptation research. *Regional Environmental Change*, *15*(5), 755-769.

-Ford, J.D., Pearce, T….(2010) What we know, do not know, and need to know about climate change vulnerability in the western Canadian Arctic: a systematic literature review. Environmental Research Letters 5(1): 014008.

\**order can change*

 **Class 12 (April 10): Group paper project (Criteria development and screening)** \*Eranga

-Galappaththi, E.K., Falardeau, M., Harris, L.N., Rocha, J.C., Moore, J.-S., Berkes, F. 2022. Resilience-based steps for adaptive co-management of Arctic small-scale fisheries. *Environmental Research Letters* 17: 083004

-Galappaththi, E.K., Susarla, V.B., Loutet, S.J.T., Ichien, S.T., Hayman, A.A., Ford, J.D. 2022. [Climate change adaptation in fisheries](https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12595). *Fish and Fisheries,* 23(1):4-21.

 **Class 13 (April 17): Group paper project (Coding questions and coding)** \*Eranga

-Araos, M., Jagannathan, K. …Galappaththi, E.K., et al. (2021) Equity in human adaptation-related responses: A systematic global review. *One Earth* 4: 1-14.

-Torhan, S., Grady, C. A., Ajibade, I., Galappaththi, E.K., Hernandez, R. R., Musah-Surugu, J. I., et al. 2022. Tradeoffs and synergies across global climate change adaptations in the food-energy-water nexus. *Earth's Future*, *10*, e2021EF002201

 **Class 14 (April 24): Group paper project (Data analysis and writing)**\*Eranga

-Galappaththi, E.K. and Schlingmann, A. 2023. The sustainability assessment of Indigenous and local knowledge-based climate adaptation responses in agricultural and aquatic food systems. *Current Opinion in Environmental Sustainability*, 62: 101276.

**Class 15 (May 1): Feedback, synthesis, website launch, and potluck**