CIEE Global Institute – Paris

Course name: Sustainable Development in the 21st Century
Course number: (GI) ENVI 2003 PAFR
Programs offering course: Paris Open Campus
Open Campus track: Sustainability and Environmental Sciences Track
Language of instruction: English
U.S. semester credits: 3
Contact hours: 45
Term: Spring 2019

Course Description

This course defines and explores sustainability in the 21st century, emphasizing drivers, outcomes and solutions to current unsustainable resource use. Students will investigate, evaluate, communicate and reflect on the multifaceted challenges of sustainable resource extraction related to nature, land transformation, food systems, energy, transportation, contamination, water use, urbanization and climate change. They will research existing solutions, from international treaties to backyard initiatives, debating controversies, assessing scientific, political and cultural components, evaluate the role of current and future technological advances, and identify gaps in what we need to know to construct workable solutions. Using class and online resources, teams of students will develop and present their own solutions to sustainability in the 21st century.

Learning Objectives

By the end of this course students will,
● Explain the United Nations 2030 Agenda for Sustainable Development and articulate its 17 Sustainable Development Goals
● Place current sustainability challenges at their proper scale, from local to global
● Explore challenges to sustainability and how current scientific knowledge and technology address them, as well as what more needs to be developed
● Apply critical thinking to more fully understand proximate and ultimate drivers of unsustainable practices and how to slow or reverse them
● Research case studies of remediation and appreciate that sustainability is not only stopping harmful practices but mending them
● Demonstrate competency in planning and implementing sustainable solutions for the 21st century
● Communicate the importance of sustainability for the 21st century through discussion, debate, writing and oral presentation of data, ideas and concepts
● Appreciate how culture impacts sustainable development and viable solutions to ameliorating harmful practices
● Identify, contact and investigate a group working on sustainable solutions in the local community and critique their operations

- Pose workable and reasonable solutions to a more sustainable 21st century on local, regional and global scales, including how to effect such change
- Evaluate their own responsibility to sustainability and how their personal commitment and decisions can lead to greater sustainability.

Course Prerequisites
None.

Methods of Instruction
Lectures, discussions, group presentations of case studies and ideas, readings, visits to local sustainability projects and related organizations, case study critique, classroom instruction and assessment will all be used to teach this course. Students will write research and comment on sustainability-related topics in groups and individually. Classroom activities will reviewing key concepts, organizing group projects and critical discussion groups. Students will research and critique current literature, working relevant findings into team sustainability plans. Students will critically evaluate the role of culture in sustainability concepts and solutions. Teams will be required to meet outside of class to research and complete team sustainability plans. Individuals will investigate a sustainability-related project with a local organization.

Assessment and Final Grade

Cultural Critique of Sustainability Essay	10 %
Report on Sustainability Non-profit	10 %
Weekly Quizzes (5)	25 %
Personal Sustainability Audit	15 %
Team Sustainability Plan	20 %
Participation	20 %

Course Requirements

Cultural Critique of Sustainability Essay
Each student will write a 1000 word essay with citations exploring cultural aspects of sustainability. This will include how different cultures define sustainability, see its importance and use science and technology to suggest solution. Finally, students will explore how culture impacts willingness to divert resources to a more sustainable 21st century.

Report on Sustainability Non-Profit
Students will investigate a local sustainability project or organization. They will interview key members and use independent research to assess the organization's sustainability goals, plans, resource needs and outreach. Students will document their experience and perspective as a 5-10 minute film.

Weekly Quizzes
Each week, students will take a quiz on the previous week's course material. Quizzes will have True/False, Multiple Choice, calculations, filling in blanks and short answer questions. Quizzes will cover only new material.

Personal Sustainability Audit
Each student will use principles of sustainability and ecological footprints to examine how their personal decisions can determine their impact. Students will examine their diet, energy use, transportation, consumption patterns and other decisions to construct a personal plan for how they can lead a more sustainable life. This will result in a personal sustainability audit that will lower their ecological footprint by at least 20%.

Team Sustainability Plan
A team of 2-3 students will design and implement a sustainability plan for the 21st century. Students will present relevant findings orally and in writing. The final manuscript should include facts, figures, appropriate statistics, clear presentation of findings and solid recommendations. The final paper will be the equivalent approx. 3000 words of text, with additional citations, figures and tables.

Participation
Participation is valued as meaningful contribution to tangible learning, utilizing resources and materials as part of the course. Meaningful contribution requires students to be prepared in advance of each class session and to have regular attendance. Students must clearly demonstrate they have engaged with the materials as directed, for example, through classroom discussions, online discussion boards, peer-to-peer feedback (after presentations), interaction with guest speakers, and attentiveness on co-curricular and outside-of-classroom activities. Participation is NOT the same as attending.

Course Attendance and Punctuality
Regular class attendance is required throughout the program, and all unexcused absences* will result in *a lower participation grade* for any affected CIEE course. Due to the intensive schedules for Open Campus and Short Term programs, unexcused absences that constitute more than 10% of the total course will result in a written warning.
*Students who transfer from one CIEE class to another during the add/drop period will not be considered absent from the first session(s) of their new class, provided they were marked present for the first session(s) of their original class. Otherwise, the absence(s) from the original class carry over to the new class and count against the grade in that class.

For CIEE classes, *excessively tardy (over 15 minutes late) students will be marked absent.* Attendance policies *also apply to any required co-curricular class excursion or event*, as well as to Internship, Service Learning, or required field placement.*

*With the exception that some class excursions cannot accommodate any tardiness, and students risk being marked as absent if they fail to be present at the appointed time.

Students who miss class for personal travel, including unforeseen delays that arise as a result of personal travel, will be marked as absent and unexcused. *No make-up or re-sit opportunity will be provided.*

An absence in a CIEE course will only be considered excused if:
● a doctor's note is provided
● a CIEE staff member verifies that the student was too ill to attend class
● satisfactory evidence is provided of a family emergency

Unexcused absences will lead to the following penalties:

Percentage of Total Course Hours Missed	*Equivalent Number of Open Campus Semester classes*	*Minimum Penalty*
Up to 10%	1	Reduction of participation grade
10 – 20%	2	Reduction of participation grade; written warning
More than 20%	3	Automatic course failure, and possible expulsion

Weekly Schedule

Week 1:   United Nations 2030 Agenda for Sustainable Development

Session 1.1   UN2030
Students will carefully review the UN 2030 agenda for Sustainable Development and explore how it builds on previous UN Millennium Development Goals. They will see how the new goals seek to achieve what the former goals did not. Students will read and present these goals to one another and explore how education, natural sciences, social and human sciences, cultural understanding, communication and information are needed to attain them. Students will discuss if there are missing elements or undue weighting of some goals over others. Each student will compile and defend a list of which goals they

feel are most important, based on immediate threat, cultural importance, severity or other criteria. There will be an instructor guided review of what has been achieved since 2015 when these goals were presented. A group discussion will explore remaining challenges and specific gaps in the UN development agenda. Finally, the group will explore different stakeholders and their responsibilities to address these challenges.

Reading: Nam, U.V., 2015. Transforming our world: The 2030 agenda for sustainable development. https://sustainabledevelopment.un.org/post2015/transformingourworld and Chapter 1: What is Sustainable Development?

Week 2   Drivers of Unsustainable Practices. Poverty.

Session 2.1 Population and Consumption
Students will track human population growth through time, seeing a steep increase around 1750 at the start of the Industrial Revolution. Students will research what led to the sudden increase in human population in light of models of exponential population growth and technological advances. Students will explore how human population growth coincides with increases in land transformation, contamination, natural resource use and other indicators of global environmental stress. They will connect human population, consumption and technology to assess environmental impact of the human population. They will also assess their own ecological footprint. Students will discuss how a business as usual path will not lead to sustainability. Students will spend time exploring options for non-profit sustainability projects to investigate.

Readings: Chapter 2: Economic Development – How to Measure it, how it Varies around the World, and Chapter 3: A Short History of Economic Development.

Quiz 1: The United Nations 2030 Agenda for Sustainable Development
Short outing to prepare for local sustainability audit: stroll through Paris's Left Bank to discover *Uritrottoirs* and the Alesia neighborhood Morris Column that cleans air with algae.

Session 2.2   Local Sustainability Audit
The instructor will walk students through the 18th/19th arrondissement of the city of Paris, pointing out places of interest, like schools, conservation, community gardens, and sustainability projects. Students will observe and discuss any local sustainability issues they perceive. They will then build up from the local community to how what they see might impact regional and global sustainability. The audit will further explore local Parisian organizations students might investigate.

Readings: Chapter 4: Why did some Countries Advance While Others Remained in Poverty? Ramos-Mejía, M et al. 2017. Sustainability transitions in the developing world: Challenges of socio-technical transformations unfolding in contexts of poverty. *Environmental science & policy* 84: 217-223.

Session 2.3 Poverty: Its Causes and Strategies to End It.

Students will use online resources and the textbook to explore reasons for poverty. They will discuss and debate the relative importance of each driver. Students will compare their consumption and footprint to people in less and more developed countries. The instructor will guide students in an exploration for why some countries advance while others remain in poverty. To do this, they will consider clinical economics, the role of physical geography (transport, energy, disease, suitable land uses), the role of politics, colonization income inequality between countries. Students will then suggest ways a sustainable 21st century can lead to greater equitability both within and between countries.

Readings: Chapter 5: Ending Extreme Poverty, Cruz, M., Foster et al. 2015. Ending Extreme Poverty and Sharing Prosperity. https://openknowledge.worldbank.org/bitstream/handle/10986/23604/Ending0extreme0rogress0and0policies.pdf?sequence=1

Assignment Due: Personal Sustainability Audit

Week 3   Planetary Boundaries and Human Rights

Session 3.1   Planetary Boundaries

Students will define planetary boundaries and survey the planetary boundaries identified. To do this, students will study growth dynamics, and consider the cases of energy, food and population. Next, groups of students will tackle one other planetary boundary and dive deep into its causes, consequences and suggested solutions to stay within safe planetary thresholds. Students will then present their findings to one another.

Reading: Chapter 6 Growth within Planetary Boundaries; Steffen, W. et al. 2015. Planetary boundaries: Guiding human development on a changing planet. *Science, 347*(6223), p.1259855.

Guest lecture from the Department of Exo-biology at the Université Paris Diderot.

Quiz 2: Drivers of unsustainable practices and the origin, maintenance and solutions for poverty.

Session 3.2   Human Rights, Gender Equality and Sustainability.

Here, students will study the economics and ethics of wealth, poverty and inequality. This will include an analysis of who bears the greatest burden from unsustainable practices. Students will review major UN declarations and decisions on this topic, examine the cultural dimensions to social inequality and human rights and how this impacts sustainability. Finally, students will discuss and present possible solutions.

Readings: Chapter 7: Human Rights and Gender Equality, Meinzen-Dick et al. 2014. Gender and sustainability. *Annual Review of Environment and Resources*, *39*.

Assignment Due: Cultural Critique of Sustainability Essay

Week 4   Sustainable Food and Sustainable Cities

Session 4.1 Sustainable Food Supply and the End of Hunger.
The instructor will provide statistics and geographic trends related to malnutrition and food scarcity. Students will then study different farming systems and how they are impacted by local abiotic conditions, soils and general ecology. This will lead to exploration of how poor use of natural resources and environmental change lead to food insecurity. They will also see how agricultural practices impact the environment and its sustainability, including soil fertility, future agricultural productivity, water regulation and pest outbreaks. Students will explore ideas for a sustainable global food supply that eliminates hunger while protecting the environment.

Readings: Chapter 10. Sustainable Food Supply and the End of Hunger; Berry, E.M et al. 2015. Food security and sustainability: can one exist without the other?. *Public health nutrition*, *18*(13), pp.2293-2302.

Quiz 3: Planetary boundaries and human rights

Outing to *Le miel de Paris*, a 20-year-old experiment in urban rooftop beekeeping on the top of the Opéra Garnier.

Session 4.2 Cultural Critique of Sustainability.
Students will select one Sustainability goal from the UN 2030 Goals for Sustainable Development. They will use knowledge from the course as well as online resources to research how culture shapes that goal. They will be responsible for examining relevant drivers to creating the sustainability issue in question and separate how much is global and how much is local. Of this, students will then tease out the cultural elements to these drivers. Students will then examine suggested mechanisms for how the goal in question can be attained and identify any cultural impediments to attaining these goals. Students will write up their findings and hand in a written report at the start of the next session.

Readings: Duxbury, N. and Jeannotte, M.S., 2010, August. Culture, sustainability and communities: Exploring the myths. In *6th International Conference on Cultural Policy Research, Jyväskylä, Finland* (pp. 24-27).

Session 4.3   Urbanization and Sustainability.

Students will first study the geography of human migration throughout history, ending with current urbanization trends. They will pose the question of what makes a city sustainable. They will examine urban infrastructure and its role in a sustainable future. Students will also define urban resilience and examine the capacity of individuals, communities, institutions, businesses and systems within a city to adapt and grow sustainably to stresses.

Reading: Chapter 11: Sustainable Cities.

Week 5   Curbing Climate Change and Protecting Biodiversity

Session 5.1   Curbing Climate Change.

Students begin with a primer on the basic science of climate change. Students will investigate consequences of climate change to the natural world, agricultural systems, economy and political stability. They will consider different suggestions for mitigating the impact of climate change on these systems. They will see how current local, regional and global policies interfere or help with mitigation efforts. Students will then articulate and extrapolate current efforts for global cooperation to curb human-caused climate change.

Readings: Chapter 12: Curbing Climate Change, Von Stechow et al. 2015. Integrating global climate change mitigation goals with other sustainability objectives: a synthesis. *Annual Review of Environment and Resources*, *40*, pp.363-394.

Quiz 4: Sustainable food and sustainable cities

Session 5.2   Saving Biodiversity.

Students will define biodiversity and its importance to human welfare. Students will list and investigate important ecosystem services. They will share their findings with one another. Students will discuss how human activity compromises biodiversity, leading to losses of abundance, extinctions, introductions of invasive species, and how this erodes natural capital. They will use statistics to articulate the current size of biodiversity loss and its projected scale. Students will explore the culture, legal and economic barriers to biodiversity protection and how to navigate them.

Readings: Chapter 13: Saving Biodiversity, Bennett, E.M et al. 2015. Linking biodiversity, ecosystem services, and human well-being: three challenges for designing research for sustainability. *Current Opinion in Environmental Sustainability*, *14*, pp.76-85.

Session 5.3   Student presentations on their sustainability non-profit.
Students will present their 5 – 10 minute films as well as additional perspectives as an oral presentation of no longer than 15 total minutes. Each student will explain the goals of the organization they investigated, their success in attaining those goals, further resources needed to attain goals and any impediments and recommendations for how these goals can be promoted. After presentations, students will assess the importance of local organizations in meeting the relevant UN 2030 Sustainability Goals

Reading: York, P., 2017. Effective Volunteer Engagement for Sustainability and Growth. *The Journal of Nonprofit Education and Leadership*, *7*(1).

Report on Sustainability Non-Profit due.

Week 6   Sustainable Development Goals and Plans for the Future

Session 6.1   Education.
Using a life-cycle approach to human development, students will examine the role of education in a sustainable 21st century. They will begin with early childhood development and end with the role of higher education in sustainable development. Ultimately, students will suggest important components in education for a sustainable future. Students will critique past efforts at environmental education, will consider the role of STEM and culture in environmental education and suggest improvements to current practices.

Readings: Chapter 8: Education, Lozano, R et al. 2015. A review of commitment and implementation of sustainable development in higher education: results from a worldwide survey. *Journal of Cleaner Production*, *108*, pp.1-18.

Quiz 5: Climate change, biodiversity and education

Session 6.2: The Sustainable Development Goals.
Students will examine the UN 2030 goals as well as those from Rio, Paris and other international accords.   They will discuss reasons why some countries sign on and others do not. Students will critique these proposals in light of goal-based development, financing, ecological principles, economics and governance.

Reading: Chapter 14: The Sustainable Development Goals , Barbier, E.B. and Burgess, J.C., 2017. The Sustainable Development Goals and the systems approach to sustainability. *Economics: The Open-Access, Open-Assessment E-Journal*, *11*(2017-28), pp.1-23.

Session 6.3   Presentation of Team Sustainability Plans.
Teams of students will present relevant findings and recommendations orally and in writing. The final manuscript should include facts, figures, appropriate statistics, clear presentation of findings and solid recommendations. The final paper will be between 5-7 pages without citations. During this final session, teams will come with their written plans prepared. They will present their sustainability plan orally to the rest of the class. These presentations should not be longer than 20 minutes, including time for questions and discussion. After presentations, students will assess the best roadmap to a sustainable 21st century.

Final Written Team Sustainability Plan due.

<u>**Course Materials**</u>
Readings
<u>Course Textbook</u>: Sachs, J.D., 2015. *The age of sustainable development.* Columbia University Press

Barbier, E.B. and Burgess, J.C., 2017. The Sustainable Development Goals and the systems approach to sustainability. *Economics: The Open-Access, Open-Assessment E-Journal, 11*(2017-28), pp.1-23.

Bennett, E.M., Cramer, W., Begossi, A., Cundill, G., Díaz, S., Egoh, B.N., Geijzendorffer, I.R., Krug, C.B., Lavorel, S., Lazos, E. and Lebel, L., 2015. Linking biodiversity, ecosystem services, and human well-being: three challenges for designing research for sustainability. *Current Opinion in Environmental Sustainability, 14*, pp.76-85.

Berry, E.M., Dernini, S., Burlingame, B., Meybeck, A. and Conforti, P., 2015. Food security and sustainability: can one exist without the other?. *Public health nutrition, 18*(13), pp.2293-2302.
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Duxbury, N. and Jeannotte, M.S., 2010, August. Culture, sustainability and communities: Exploring the myths. In *6th International Conference on Cultural Policy Research, Jyväskylä, Finland* (pp. 24-27).

Cruz, M., Foster, J.E., Quillin, B. and Schellekens, P., 2015. Ending Extreme Poverty and Sharing Prosperity.
<u>https://openknowledge.worldbank.org/bitstream/handle/10986/23604/Ending0extreme0rogress0and0policies.pdf?sequence=1</u>

Lozano, R., Ceulemans, K., Alonso-Almeida, M., Huisingh, D., Lozano, F.J., Waas, T., Lambrechts, W., Lukman, R. and Hugé, J., 2015. A review of commitment and

implementation of sustainable development in higher education: results from a worldwide survey. *Journal of Cleaner Production*, *108*, pp.1-18.

Meinzen-Dick, R., Kovarik, C. and Quisumbing, A.R., 2014. Gender and sustainability. *Annual Review of Environment and Resources*, *39*.

Ramos-Mejía, M., Franco-Garcia, M.L. and Jauregui-Becker, J.M., 2017. Sustainability transitions in the developing world: Challenges of socio-technical transformations unfolding in contexts of poverty. *Environmental science & policy*. 84: 217-223

Steffen, W., Richardson, K., Rockström, J., Cornell, S.E., Fetzer, I., Bennett, E.M., Biggs, R., Carpenter, S.R., De Vries, W., de Wit, C.A. and Folke, C., 2015. Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), p.1259855

Von Stechow, C., McCollum, D., Riahi, K., Minx, J.C., Kriegler, E., Van Vuuren, D.P., Jewell, J., Robledo-Abad, C., Hertwich, E., Tavoni, M. and Mirasgedis, S., 2015. Integrating global climate change mitigation goals with other sustainability objectives: a synthesis. *Annual Review of Environment and Resources*, *40*, pp.363-394.

York, P., 2017. Effective Volunteer Engagement for Sustainability and Growth. *The Journal of Nonprofit Education and Leadership*, *7*(1).

Academic Integrity

CIEE subscribes to standard U.S. norms requiring that students exhibit the highest standards regarding academic honesty. Cheating and plagiarism in any course assignment or exam will not be tolerated and may result in a student failing the course or being expelled from the program. Standards of honesty and norms governing originality of work differ significantly from country to country. We expect students to adhere to both the U.S. American norms and the local norms, and in the case of conflict between the two, the more stringent of the two will prevail.

Three important principles are considered when defining and demanding academic honesty. These are related to *the fundamental tenet that one should not present the work of another person as one's own*.

The first principle is that *final examinations, quizzes and other tests must be done without assistance from another person, without looking at or otherwise consulting the work of another person, and without access to notes, books, or other pertinent information* (unless the professor has explicitly announced that a particular test is to be taken on an "open book" basis).

The second principle applies specifically to course work: *the same written paper may not be submitted in more than one course. Nor may a paper submitted at another educational institution be submitted to satisfy a paper requirement while studying abroad.*

The third principle is that *any use of the work of another person must be documented in any written papers, oral presentations, or other assignments carried out in connection with a course. This usually is done when quoting directly from another's work or including information told to you by another person* (the general rule in U.S. higher education is that if you have to look something up, or if you learned it recently either by reading or hearing something, you have to document it).

There are three levels of escalation establishing the seriousness of the plagiarism in question.
● **Level one plagiarism**: minor or unintentional plagiarism; leading to passable grade/failing grade on the assignment, depending on perspective of lecturer. No opportunity for resubmission.
● **Level two plagiarism**: significant plagiarism, but potentially due to poor referencing rather than intellectual property theft. This leads to a failing grade (potentially zero points) on the assignment. No opportunity for resubmission.
● **Level three plagiarism**: significant plagiarism, requiring investigation by the Center/Resident/Academic Director, and subsequent disciplinary panel.

Faculty will report any suspected circumstances of plagiarism to the Center/Resident/Academic Director immediately. Faculty can, if they deem it appropriate, require students to submit the Plagiarism Declaration Form (Appendix D) with each assignment as it is submitted.

In any case where Academic Honesty is in question while the student is still onsite at the program, and will impact the grade for the assignment in question, the CIEE Academic Honesty form (Appendix E) will be completed by the Center/Resident/Academic Director, signed by the professor, delivered to the student for signature and added to the student's permanent records. For any Level three violation, or repeated lower level violation, the Center/Resident/Academic Director will inform the student's home institution of the infraction and subsequent penalty.