

Education for Sustainable Development: From Global Agendas to Local Actions with Circular Economy

United Nations University (UNU-IAS)

Autumn 2024

Location: [6F Lecture Room, United Nations University, Tokyo](#)

Time: Thursday 09:30-11:10 (3 October until 31 October 2024, 14 and 21 November, 19 December and 30 January 2025)

Half day sessions 09:30-13:00 (7 November, 5 and 12 December 2024)

Lecturer: [Anupam Khajuria](#)

Contact Information : khajuria@unu.edu

Office Hours: [by appointment](#)

Course Description

This 2-credit course offers a comprehensive understanding of Education for Circular Economy (CE) and Education for Sustainable Development (ESD). It focuses on the role of these concepts in addressing global challenges and promoting sustainable societal change. The course covers the fundamental principles of ESD, the importance of CE in achieving the Sustainable Development Goals (SDGs), and innovative methodologies and community-driven development approaches within the realm of CE and ESD. The course includes engaging lectures, interactive activities, field visits, and thought-provoking documentaries.

Students will explore the relationship between global agendas and local actions in CE and ESD and analyze sustainability issues in local communities. The course will also introduce innovative CE approaches, ESD programs and policies, and examine the involvement of teachers, youth, and the community through case studies.

Guiding questions for developing presentations will be provided during the course. By the end of the course, students will have a thorough understanding of the importance of CE and ESD in achieving the 17 SDGs by 2030, as well as the skills to analyze and address local sustainability issues through education.

Course Objectives and Learning Goals

- *Understand the principles and concepts of the CE and ESD in achieving SDGs from an inclusive and lifelong learning perspective.*
- *Develop the ability to critically evaluate the impact of global and local actions on achieving circular economy and sustainable development goals.*
- *Enhance skills in designing and implementing educational strategies to promote circular economy and sustainable development at local levels.*

- *Learn about the theories and practices of circular economy and the importance of the local context in shaping education for sustainability, with a focus on strategies for translating global sustainability goals into actionable initiatives at the community level.*
- *Foster critical thinking and problem-solving skills to address challenges associated with transitioning to a circular economy and achieving sustainable development.*

Requirements and Grading Policy

All students are expected to complete the required readings before each class. The course requirements also include active class participation, short presentations, and short assignments, which will be compiled at the end of the semester to create a final report detailing current state-of-the-art on educational policies regarding the role of circular economy in sustainable development, to share a good and innovative practice of CE in different countries, to open and encourage a critical discussion on the topic.

- *Class attendance and active class participation (10%): 80% of the class attendance is required. 2% deducted per absence unless pre-approved.*
- *Short written assignments (40%): Individual writing assignment (2,500 words max, excl. references) by 7 November 2024*
- *Final report (30%): Group assignment to write a report for a country/community of your choice. Include practical and feasible policy measures and recommendations to ensure circular economy education systems.*
- *Final presentation (20%): Oral presentation of the final report.*

Class Participation

The course requires students to attend all classes, to arrive on time, to complete the readings and to participate actively in class discussions. This means speaking during each and every class. At the discretion of the instructor, frequent late arrivals or absences may result in a lower grade. Please note that the first session is of particular importance and cannot be missed. Students are also strongly encouraged to regularly follow the news to keep up with international developments, as these events will be reflected in the class discussions. Relevant news sites and reporting archives will be shared by the instructor during the class.

Short Written Assignments

In order to develop a thorough understanding of the unique contexts and constraints faced by the country they will be researching; students will be asked to write an individual paper on the following topic for the country or community of their choice:

- I. *General background of the country or community: Profile of the selected country or community, describe current environmental issues.*
- II. *Potential benefits of the circular economy to selected case study.*
- III. *Steps taken to-date in implementing circular economy practices and case study of circular economy education.*
- IV. *Current issues in education and potential needs in the context of circular economy and education for sustainable development.*

Assignments should be no more than five written pages, not including a works cited page. Quality visualizations such as charts and graphs are strongly encouraged. Students are

expected to edit the assignments based on instructor and classmates' feedback, as these will serve as chapters in the final report.

Final Report:

The final report for the class should be a synthesis report containing a set of recommendations for a country or community of the group's choice, explicitly informed by currently available data. The groups are encouraged to choose a country or community from one of the members' individual assignments (short assignment) so that the group can build up the final assignment on the findings of the short assignment.

The requirements of the final report include:

- *Introduction to circular economy education within the context of the specific country/ community.*

Discuss how the principles of the circular economy can be integrated into the country's or community's educational system. This includes case studies or examples that highlight unique challenges and responses to promote responsible consumption among students.

- *Assessment of current practices*

Evaluate the current practices and policies related to waste management, resource use and sustainability in your selected country or community. Pay special attention to existing educational initiatives and their effectiveness in promoting circular economy practices.

- *Development of Action Plan*

Create a comprehensive action plan for implementing circular economy practices in your chosen country or community. This includes vision and goals, strategies and educational components, policy recommendations, monitoring and evaluation.

- *Integration of educational components*

Explain how education and awareness-raising can be integrated into your action plan to foster a circular economy mindset among stakeholders.

The final report should be no more than 4,000 words, not including a works cited page. Quality visualizations such as charts and graphs are strongly encouraged. The document must be in MS format and single-spaced, 12-point Times New Roman font. The papers must have a title, a proper introduction and policy recommendation section and all material that is used to support the student's argument must be clearly cited. For the in-text citations and the bibliography, we suggest that students use APA style or Harvard style citations.

Final Group Presentation:

Students will have 15-20 minutes to present the group final report, using a PowerPoint or similar style of presentation platform. More details will be shared during the course.

Course Outline

Lecture No.	Frame work	Title	Date	Instructors/Invited Speakers if any
1	Introduction	Lecture: <ul style="list-style-type: none"> • Global challenges: How much do we know? • Learning goals • Overview of assignments. 	Thursday, October 3rd, 2024 ~ 09:30-11:10	Anupam Khajuria (UNU IAS)
2		Lecture: <ul style="list-style-type: none"> • Importance of ESD: Why education? • SDG 4: Education 2030 Agenda 	Thursday, October 10th, 2024 ~ 09:30-11:10	Anupam Khajuria (UNU IAS)
3		Lecture: <ul style="list-style-type: none"> • Introduction to ESD: Trends, main issues and challenges • ESD 2030 Roadmap 	Thursday, October 17th, 2024 ~ 09:30-11:10	Anupam Khajuria (UNU IAS)
4		Lecture: <ul style="list-style-type: none"> • Technologies for ESD: Pros and cons 	Thursday, October 24th, 2024 ~ 09:30-11:10	Jonghwi Park (UNU IAS)
5	ESD, Circular Economy and SDG	Lecture: <ul style="list-style-type: none"> • What is Circular Economy? • Need of education: To adopt CE 	Thursday, October 31st, 2024 ~ 09:30-11:10	Anupam Khajuria (UNU IAS)
6,7		Educational visit: <ul style="list-style-type: none"> • Educational visit to “Tokyo Super Eco-Town” 	Thursday, November 7th, 2024 ~ 09:30-13:00	Anupam Khajuria (UNU IAS)
8		Lecture: <ul style="list-style-type: none"> • Circular Economy: Electronic Waste 	Thursday, November 14th, 2024 ~ 09:30-11:10	Prof. Sunil Herat, Griffith University, Australia (Online)
9		Lecture: <ul style="list-style-type: none"> • Circular Economy: Biorefineries 	Thursday, November 21st, 2024 ~ 09:30-11:10	Prof. Ian A Watson, University of Glasgow, United Kingdom (Online)
10,11	CE Practices and Education	Lecture and Documentary: <ul style="list-style-type: none"> • Education for Sustainable Future – Inspiring Practices from Europe (link) • Sustainability Documentary (link) 	Thursday, December 5th, 2024 ~ 09:30-13:00	Anupam Khajuria (UNU-IAS)
12,13		Lecture and Documentary: <ul style="list-style-type: none"> • Circular design for food: six short stories (link) • Redesigning the future of fashion (link) 	Thursday, December 12th, 2024 ~ 09:30-13:00	Anupam Khajuria (UNU IAS)
14		Lecture: <ul style="list-style-type: none"> • Circular Economy in Fast fashion industry 	Thursday, December 19th, 2024 ~ 09:30-11:10	Anupam Khajuria (UNU IAS)

15	Final presentation	Thursday, January 30th, 2025 ~ 09:30-11:10
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Course Readings (Required: instructor must coordinate with academic librarian whether or not student is reachable to the materials.)

Each class will have a series of required readings that have to be completed prior to the class. The average reading load per class period is 40~80 pages. Students are expected to actively contribute to class discussions based on the material provided. The lecturer reserves the right to update the reading list throughout the course and will alert students to the changes in class. The texts will also be a critical component of the arguments in the course, and the familiarity with material should be demonstrated as it pertains to each assignment. The textbooks used in the course are available at the UNU library and relevant chapters can be copied at the designated copy machines. If any required readings from academic journals or e-books are added to the course, these can be accessed through the public work stations at the UNU library, using your UNU student login and password. Additional readings from web based content will also be included.

- Caldwell, L. K., & Weiland, P. S. (1996). *International environmental policy: from the twentieth to the twenty-first century*. Duke University Press.
- Radkau, J. (2008). *Nature and power: a global history of the environment*. Cambridge University Press.
- Axelrod, R. S., & Van Deveer, S. D. (Eds.). (2014). *The global environment: institutions, law, and policy*. CQ Press.

Please note supplementary readings may be added in the lead up to and follow-up from COP 26.

Course Readings by each Lecture

Lecture No.	Recommended Readings
1	Introduction to the Course <ul style="list-style-type: none"> • Transforming our world: the 2030 Agenda for Sustainable Development: https://sdgs.un.org/2030agenda
2	Importance of ESD <ul style="list-style-type: none"> • Unpacking Sustainable Development Goal 4: Education 2030: https://unesdoc.unesco.org/ark:/48223/pf0000246300.locale=en • Quality Education: Why it matters?: https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-4.pdf
3	Introduction to ESD <ul style="list-style-type: none"> • Education for Sustainable Development- A Roadmap: https://unesdoc.unesco.org/ark:/48223/pf0000374802.locale=en

4	Technologies for ESD
	<ul style="list-style-type: none"> • What's next for Ed-Tech? Critical hopes and concerns for the 2020s: https://www.tandfonline.com/doi/epdf/10.1080/17439884.2020.1694945?needAccess=true •
5	Circular Economy
	<ul style="list-style-type: none"> • Towards the Circular Economy: Economic and business rationale for an accelerated transition: https://emf.thirdlight.com/file/24/xTyQj3oxiYNMO1xTFs9xT5LF3C/Towards%20the%20circular%20economy%20Vol%201%3A%20an%20economic%20and%20business%20rationale%20for%20an%20accelerated%20transition.pdf
6,7	Educational visit
8	Circular Economy: Electronic waste
	<ul style="list-style-type: none"> • E-Waste Management in Asia Pacific Region: Review of Issues, Challenges and Solutions: https://neptjournal.com/upload-images/(5)D-1148.pdf • The United Nations and E-waste: https://unemg.org/images/emgdocs/ewaste/E-waste%20Synthesis%20Report%20-%20unedited%20version.pdf
9	Circular Economy: Biorefineries
	<ul style="list-style-type: none"> • Biorefineries in circular bioeconomy: A comprehensive review: https://www.sciencedirect.com/science/article/pii/S0960852419318152 • Waste biorefinery towards a sustainable circular bioeconomy: a solution to global issues: https://biotechnologyforbiofuels.biomedcentral.com/articles/10.1186/s13068-021-01939-5 • Sustainable biorefinery approaches towards circular economy for conversion of biowaste to value added materials and future perspectives: https://www.sciencedirect.com/science/article/pii/S0016236122016891
10,11	Documentary on Sustainable Future
	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=xD3bvIbAYtI • https://www.youtube.com/watch?v=bjrPilem30g
12,13	Documentary on Circular Economy
	<ul style="list-style-type: none"> • https://www.ellenmacarthurfoundation.org/videos/circular-design-for-food-six-short-stories • https://www.ellenmacarthurfoundation.org/topics/fashion/overview

14	<p>Circular Economy in Fast fashion industry</p> <ul style="list-style-type: none"> • A sustainable and resilient circular fashion and textiles industry: https://www.stockholmresilience.org/download/18.66e0efc517643c2b8103605/1617805679501/Sustainable%20Textiles%20Synthesis%20Report.pdf • A vision of a circular economy for fashion: https://pacecircular.org/sites/default/files/2021-03/Vision-of-a-circular-economy-for-fashion.pdf
15	<p>Final presentation</p> <p>N/A</p>

Important Information (Required)

Class Conduct & Etiquette

Students are expected to arrive on time and not to engage in disruptive behavior during class. This includes, among other things, private side conversations, the use of cell-phones and other electronic devices, or the reading of newspapers. Cell-phones should be switched off and stored in the bag. We wish to create an atmosphere of open and tolerant discussion in the classroom and request students to recognize every individual's right to have an opinion. The lecturer and other students should be treated with dignity and respect, in particular in discussions on contentious political issues where a diversity of opinion is likely to arise. However, we also recognize that there are limits to tolerance and the lecturer reserves the right to request disciplinary action against any student who violates this policy or repeatedly shows disruptive behavior in class.

Computer Use in Class

The use of computers (including tablets) in the classroom is restricted to taking notes, reading of the course material or searching for course related information in the internet. Any disruption of the class by cell phones, instant messaging programs or other communication devices will not be tolerated. The lecturer reserves the right to revoke this permission if a student is found using a computer for any non-course related activities.

Plagiarism & Academic Misconduct

Please be aware that the consequences of plagiarism are severe and students found guilty of academic misconduct will be punished in accordance with UNU's academic honesty policies. The lecturer reserves the right to run all assignments through an anti-plagiarism software provided by the UNU. If evidence of academic misconduct on the assigned presentations, the mid-term exam or the final essay should be found, the assignment will receive a failing grade. In case of repeated violations of academic conduct, the student may receive a failing grade for the entire course and will be reported to the appropriate authorities for disciplinary action.

Invited Speakers/Lecturers Bio (Required)

Prof. Sunil Herat

Griffith University, Australia

Sunil Herat is an Associate Professor in Waste Management and Circular Economy at Griffith University, Brisbane, Australia. He is the Program Director of the Master of Environmental Engineering and Pollution Control. He is a member of the Expert Subsidiary Group of Regional 3R and Circular Economy Forum of Asia and the Pacific, managed by the United Nations Centre for Regional Development. A/Prof Herat has over 25 years of experience in waste management, particularly on issues and challenges related to E-waste in developing and emerging economies. He is an expert on training programs in municipal solid waste management, hazardous waste management, cleaner production and eco-efficiency, and circular economy. He has extensive experience training waste management professionals in the Asia Pacific region. He has conducted training and capacity-building programs in Vietnam, Indonesia, Singapore, India, Sri Lanka, Bhutan, Thailand, and the Pacific Islands (Fiji). He is also actively involved in revising environmental regulations related to Extended Producer Responsibility (EPR) in Vietnam. He has contributed to the United Nations publication GEO 6 and United Nations University's Global E-waste Monitor 2020 and 2024.

Prof. Ian A Watson

University of Glasgow, United Kingdom

Ian is a Reader in Applied Energy at the University of Glasgow, UK., in the James Watt School of Engineering at the University of Glasgow. With a background in laser physics and engineering, his current research encompasses a broad area from improving thermochemical processing, microalgae, including growth and novel photobioreactors, dewatering and extraction for high value products, nutrition, biofuel and novel forms of decontamination. On thermochemical work, his focus is on delivering improved system performance and addressing multilevel systems integration from e.g. automated Miscanthus farming through to pyrolysis and gasification with enhanced novel sensors and control to integrated biorefinery strategies to increase scale and reduce deployment time. Machine learning and real time control permeates modelling and experimental approaches.