

**ES/EC/IB 343 – CIRCULAR ECONOMY: A VISIONARY SYSTEM  
IN A GLOBAL AND EUROPEAN CONTEXT**  
IES Abroad Berlin

**DESCRIPTION:**

In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society. This unique course is centered around the concept of a circular economy that seeks to rebuild capital – whether this is financial, manufactured, human, social, or natural – and fully respects the resources and ecological limits of our planet. To ensure sustainable growth, resources must be used in a smarter, more sustainable way. Many natural resources are finite, an environmentally and economically sustainable way of using them must be found. No longer can we build our future on the linear “take-make-dispose” model. Underpinned by a transition to renewable energy sources, the circular economy model builds economic, natural, and social capital on three principles: design out waste and pollution, keep products and materials in the circle, and regenerate natural systems. Further, it represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits. This course will have a special focus on developments within the European Union, namely the 2018 Circular Economy Package and its underlying strategy and legislations.

**CREDITS:** 3

**CONTACT HOURS:** 45

**LANGUAGE OF INSTRUCTION:** English

**PREREQUISITES:** None

**ADDITIONAL COST:** None

**METHOD OF PRESENTATION:**

- Lectures,
- Class discussion of the required readings,
- Student presentation of selected case studies,
- Field trip(s),
- And guest speakers.

**REQUIRED WORK AND FORM OF ASSESSMENT:**

- Course participation – 10%
- Midterm exam – 30%
- Exploration diary – 20%
- Final exam – 40%

**Course Participation**

Students must complete the assigned readings and assignments, participate actively in class discussions and attend all planned field trips. The IES grading rubric for participation is available on Moodle.

**Midterm Exam**

Using a common household good, the student will demonstrate its optimum design with regard to disassembly, repair, closing the materials loops, etc. The first part of the midterm exam is a written take-home paper of a minimum 1,500 words and must include at least 3 citation sources. The second part is a short presentation (visual/oral or only oral) of the findings (i.e., the outcome of the written take-home paper, presented in class).

**Exploration Diary**

Students must keep a record of their learnings, experiences and observations. In the exploration diary, students should write down their personal highlights from the course. This diary must include entries for sessions 1 to 14 and be handed in before session 15. The diary must be a minimum of 3,000 words.

**Final Exam:**

Topics and research questions will be proposed by the instructor in session 9. Based on sessions 1 to 8, students will create their own circular economy business model for a chosen product or service. They will create a business model canvas for this chosen product/service based on the “cradle-to-cradle” concept, a sustainable business strategy that mimics the regenerative cycle of nature, in which waste is reused. The first part of the final paper will be this business model canvas of a minimum 3,000 words. The second part will be a presentation of the results of the research in class, including a visual presentation (e.g., PowerPoint or Prezi).

**LEARNING OUTCOMES:**

Upon completion of this course, the student will be able to:

- Explain the difference between a linear and circular economy as well as infinite resources and planetary boundaries;
- Understand the concept of a circular economy in general and in the European Union in particular;
- Gain detailed knowledge of a circular economy and its building blocks and context (e.g., “cradle-to-cradle”);
- Describe the European Union’s Circular Economy Package and the concept of a shared/collaborative economy;
- Design her/his own product, supported by experts and the business model canvas;
- Demonstrate a deep knowledge of the circular economy in areas of plastics and modern agriculture, renewable energies and cities;
- Acquire background and context knowledge about sustainable development and systems thinking, including a System Dynamic activity;
- Discuss packaging design, German specifics (e.g., plastics, bio and packaging guidelines) and policymaking with guest speakers;
- And improve academic research, writing and oral presentation skills.

**ATTENDANCE POLICY:**

Attendance and punctuality in all courses and field studies are mandatory. Absences can only be excused for valid reasons. Unexcused absences can affect students’ grades. Students who miss 25% or more of all class sessions will fail the course. Missed exams cannot be taken at another time except in case of documented illness. Late submission of term papers and other work will result in grade reduction unless an extension due to illness or an emergency is approved. Please consult the IES Abroad Berlin academics manual on Moodle for additional details.

**ACADEMIC INTEGRITY:**

Students are expected to abide by the IES Abroad Academic Integrity Code. Assignments need to be properly and amply footnoted where appropriate, with all sources attributed, including images. This not only applies to written assignments but also presentations by means of PowerPoint, Prezi or posters. Contributions may be checked with plagiarism-detecting software.

**CONTENT:**

Sessions	Content	Readings
Week 1	Session 1: <ul style="list-style-type: none"> <li>• Introduction</li> <li>• The sharing economy</li> </ul>	<ul style="list-style-type: none"> <li>• Stahel, W.R. (2016). The circular economy. Nature 531, p. 435–438. Available: <a href="https://www.nature.com/news/the-circular-economy1.19594">https://www.nature.com/news/the-circular-economy1.19594</a></li> <li>• Ellen MacArthur Foundation. “Circular Economy Schools of Thought” (text and videos). Available: <a href="https://www.ellenmacarthurfoundation.org/circular-economy/concept/schools-of-thought">https://www.ellenmacarthurfoundation.org/circular-economy/concept/schools-of-thought</a></li> <li>• De Wit, M., J. Hoogzaad &amp; C. von Daniels (2020). The Circularity Gap Report 2020. Platform for Accelerating the Circular Economy (PACE). Available: <a href="https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%20210x297mm%20-%20compressed.pdf">https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%20210x297mm%20-%20compressed.pdf</a></li> <li>• Schor, J. (2014). “Debating the sharing economy”. Available: <a href="https://greattransition.org/publication/debating-the-sharing-economy">https://greattransition.org/publication/debating-the-sharing-economy</a></li> </ul>

	<p>Session 2: European Union</p> <ul style="list-style-type: none"> <li>European agenda for collaborative economy</li> <li>Circular Economy Package (CEP)</li> <li>European Strategy for Plastics</li> <li>Sustainable consumption and production</li> </ul>	<ul style="list-style-type: none"> <li>Ellen MacArthur Foundation (2020). "The EU's Circular Economy Action Plan: Setting the world's largest single market on a transition towards a circular economy". Available: <a href="https://www.ellenmacarthurfoundation.org/assets/downloads/EU-Case-Study-june2020-EN.pdf">https://www.ellenmacarthurfoundation.org/assets/downloads/EU-Case-Study-june2020-EN.pdf</a></li> <li>European Commission (2016). "A European agenda for collaborative economy". Available: <a href="http://ec.europa.eu/DocsRoom/documents/16881/attachments/2/translations">http://ec.europa.eu/DocsRoom/documents/16881/attachments/2/translations</a></li> <li>European Commission (2015). "Circular Economy Package: Questions &amp; Answers". Available: <a href="http://europa.eu/rapid/press-release MEMO-15-6204 en.htm">http://europa.eu/rapid/press-release MEMO-15-6204 en.htm</a></li> <li>European Commission (2018). "A European Strategy for Plastics in a Circular Economy". Available: <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&amp;uri=COM:2018:28:FIN">https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&amp;uri=COM:2018:28:FIN</a></li> <li>European Parliament (2019). "Sustainable consumption and production". Available: <a href="https://www.europarl.europa.eu/factsheets/en/sheet/77/sustainable-consumption-and-production">https://www.europarl.europa.eu/factsheets/en/sheet/77/sustainable-consumption-and-production</a></li> <li>European Commission. "Circular economy: Closing the loop – The production phase of the circular economy". Available: <a href="https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-production en.pdf">https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-production en.pdf</a></li> </ul>
<p><b>Week 2</b></p>	<p>Session 3: Challenging common conceptions</p> <ul style="list-style-type: none"> <li>Links between environmental and economic issues</li> <li>An alternative way of approaching environmental, social and economic issues</li> </ul>	<ul style="list-style-type: none"> <li>Ellen MacArthur Foundation. "Seeing the bigger picture" (videos). Available: <a href="https://www.youtube.com/playlist?list=PLD2C43638C526D33F">https://www.youtube.com/playlist?list=PLD2C43638C526D33F</a></li> </ul> <p><b>Each video ends with a question; students should prepare answers in advance for discussion in class.</b></p>
	<p>Session 4: Exploring the circular economy</p> <ul style="list-style-type: none"> <li>Comparing living and manmade systems</li> <li>Linear/materials economy</li> <li>The circular economy</li> </ul>	<ul style="list-style-type: none"> <li>Raworth K., (2017). "Doughnut Economics – Seven Ways to Think Like a 21st-Century Economist". p. 111-138.</li> </ul>
<p><b>Week 3</b></p>	<p>Session 5: Understanding the challenge of "finite" resources</p> <ul style="list-style-type: none"> <li>The urgent challenge of finite resources</li> <li>Economic history since industrial revolution</li> <li>Our current consumption and production systems</li> </ul>	<ul style="list-style-type: none"> <li>The Ellen MacArthur Foundation (2013). "Towards the Circular Economy Vol. 1: an economic and business rationale for an accelerated transition". p. 13-62. Available: <a href="https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf">https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf</a></li> </ul>
	<p>Session 6: Designing for a circular economy</p> <ul style="list-style-type: none"> <li>Introduction of companies that have adopted the circular economy</li> </ul>	<ul style="list-style-type: none"> <li>Ellen MacArthur Foundation. "Philips &amp; Turntoo: Selling light as a service". Available: <a href="https://www.ellenmacarthurfoundation.org/case-studies/selling-light-as-a-service">https://www.ellenmacarthurfoundation.org/case-studies/selling-light-as-a-service</a></li> <li>Ellen MacArthur Foundation. "FLOW2: Business-to-business asset sharing". Available:</li> </ul>

		<p><a href="https://www.ellenmacarthurfoundation.org/case-studies/business-to-business-asset-sharing">https://www.ellenmacarthurfoundation.org/case-studies/business-to-business-asset-sharing</a></p> <ul style="list-style-type: none"> <li>• Ellen MacArthur Foundation. “MUD Jeans: Pioneering a lease model for organic cotton jeans”. Available: <a href="https://www.ellenmacarthurfoundation.org/case-studies/pioneering-a-lease-model-for-organic-cotton-jeans">https://www.ellenmacarthurfoundation.org/case-studies/pioneering-a-lease-model-for-organic-cotton-jeans</a></li> <li>• Ellen MacArthur Foundation. “Re-Tek: Establishing a reverse supply chain for electronics”. Available: <a href="https://www.ellenmacarthurfoundation.org/case-studies/establishing-a-reverse-supply-chain-for-electronics">https://www.ellenmacarthurfoundation.org/case-studies/establishing-a-reverse-supply-chain-for-electronics</a></li> <li>• World Business Council for Sustainable Development. “Strategies and examples”. Available: <a href="https://www.ceguide.org/Strategies-and-examples">https://www.ceguide.org/Strategies-and-examples</a></li> </ul>
<b>Week 4</b>	<p>Session 7: The circular economy &amp; modern agriculture</p> <ul style="list-style-type: none"> <li>• The challenges around conventional monocultures and soil quality</li> <li>• Challenges in modern agriculture and securing the food supply for the future</li> </ul>	<ul style="list-style-type: none"> <li>• Ellen MacArthur Foundation. “Lesson 5: The Circular Economy and Modern Agriculture”. Available: <a href="https://www.ellenmacarthurfoundation.org/assets/downloads/schools-colleges/Schools-Colleges-WLL-Lesson-Plan-5-F.pdf">https://www.ellenmacarthurfoundation.org/assets/downloads/schools-colleges/Schools-Colleges-WLL-Lesson-Plan-5-F.pdf</a></li> </ul>
	<p>Session 8: Redesigning plastics</p> <ul style="list-style-type: none"> <li>• What happens to our waste plastic?</li> <li>• Is recycling plastics really that effective?</li> </ul>	<ul style="list-style-type: none"> <li>• Ellen MacArthur Foundation (2016). “The New Plastics Economy: Rethinking the Future of Plastics”. p. 22-42, 44-72 &amp; 86-96. Available: <a href="https://www.newplasticseconomy.org/assets/doc/EllenMacArthurFoundation_TheNewPlasticsEconomy_Pages.pdf">https://www.newplasticseconomy.org/assets/doc/EllenMacArthurFoundation_TheNewPlasticsEconomy_Pages.pdf</a></li> <li>• Ellen MacArthur Foundation (2019). “New Plastics Economy: Reuse – Rethinking Packaging”. p. Available: <a href="https://www.newplasticseconomy.org/assets/doc/Reuse.pdf">https://www.newplasticseconomy.org/assets/doc/Reuse.pdf</a></li> </ul>
<b>Week 5</b>	Midterm exam	
<b>Week 6</b>	<p>Session 9: Circular economy and cities</p> <ul style="list-style-type: none"> <li>• Major innovations and trends associated with modern cities</li> </ul> <p>Business model canvas</p> <ul style="list-style-type: none"> <li>• Applying the business model canvas to develop your own business model</li> </ul>	<ul style="list-style-type: none"> <li>• Ellen MacArthur Foundation. “The Future of Cities”. Available: <a href="https://www.ellenmacarthurfoundation.org/assets/downloads/future-of-cities.pdf">https://www.ellenmacarthurfoundation.org/assets/downloads/future-of-cities.pdf</a></li> <li>• Strategyzer. “Business Model Canvas Explained” (video). Available: <a href="https://vimeo.com/78350794">https://vimeo.com/78350794</a></li> <li>• Strategyzer. “Business Model Canvas”. Available: <a href="https://www.strategyzer.com/canvas/business-model-canvas">https://www.strategyzer.com/canvas/business-model-canvas</a></li> </ul>
	<p>Session 10: Circular economy and Berlin – Part 1</p> <ul style="list-style-type: none"> <li>• Guest speaker (e.g., Dina Padalkina, Founder &amp; CEO of Circular Berlin)</li> </ul>	
<b>Week 7</b>	<p>Session 11: Circular economy solutions – Part 1</p> <ul style="list-style-type: none"> <li>• Field excursion (e.g., CRCLR House in Neukölln)</li> </ul>	

	<p>Session 12: Circular economy and Berlin – Part 2</p> <ul style="list-style-type: none"> <li>• Guest speaker</li> </ul>	
<b>Week 8</b>	<p>Session 13: Circular economy solutions – Part 2</p> <ul style="list-style-type: none"> <li>• Field excursion</li> </ul>	
	<p>Session 14: Renewable energies &amp; energy efficiency</p> <ul style="list-style-type: none"> <li>• Circular economy as a substantial shift to renewables and energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Olabi, Abdul Ghani (2019). "Circular economy and renewable energy". Energy. 181: p. 450-454. Available: <a href="https://doi.org/10.1016/j.energy.2019.05.196">https://doi.org/10.1016/j.energy.2019.05.196</a></li> </ul>
<b>Week 9</b>	<p>Session 15: Agenda 2030 and its Sustainable Development Goals (SDGs)</p> <ul style="list-style-type: none"> <li>• The link between UN's SDGs and the circular economy</li> </ul>	<ul style="list-style-type: none"> <li>• United Nations. "The 17 Goals". Available: <a href="https://sdgs.un.org/goals">https://sdgs.un.org/goals</a></li> <li>• United Nations. "12: Ensure sustainable consumption and production patterns". Available: <a href="https://sdgs.un.org/goals/goal12">https://sdgs.un.org/goals/goal12</a></li> <li>• Schroeder, Patrick, Kartika Anggraeni &amp; Uwe Weber (2018). "The Relevance of Circular Economy - Practices to the Sustainable Development Goals- Circular Economy and SDGs". Available: <a href="https://www.researchgate.net/publication/323156948_The_Relevance_of_Circular_Economy_Practices_to_the_Sustainable_Development_Goals_Circular_Economy_and_SDGs">https://www.researchgate.net/publication/323156948_The_Relevance_of_Circular_Economy_Practices_to_the_Sustainable_Development_Goals_Circular_Economy_and_SDGs</a></li> <li>• Geissdoerfer, Martin, Paulo Savaget, Nancy M. P. Bocken &amp; Erik Jan Hultink (2017). "The Circular Economy – A new sustainability paradigm?" Journal of Cleaner Production. 143: p. 757–768.</li> </ul>
	<p>Session 16: Circular economy solutions – Part 3</p> <ul style="list-style-type: none"> <li>• Field excursion (e.g., Circular Economy Tours)</li> </ul>	
<b>Week 10</b>	Final exam	

#### REQUIRED READINGS:

- De Wit, M., J. Hoogzaad & C. von Daniels (2020). The Circularity Gap Report 2020. Platform for Accelerating the Circular Economy (PACE). Available: [https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293\\_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%2020210x297mm%20-%20compressed.pdf](https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%2020210x297mm%20-%20compressed.pdf)
- Ellen MacArthur Foundation. "Circular Economy Schools of Thought" (text and videos). Available: <https://www.ellenmacarthurfoundation.org/circular-economy/concept/schools-of-thought>
- Ellen MacArthur Foundation. "FLOOW2: Business-to-business asset sharing". Available: <https://www.ellenmacarthurfoundation.org/case-studies/business-to-business-asset-sharing>
- Ellen MacArthur Foundation. "Lesson 5: The Circular Economy and Modern Agriculture". Available: <https://www.ellenmacarthurfoundation.org/assets/downloads/schools-colleges/Schools-Colleges-WLL-Lesson-Plan-5-F.pdf>
- Ellen MacArthur Foundation. "MUD Jeans: Pioneering a lease model for organic cotton jeans". Available: <https://www.ellenmacarthurfoundation.org/case-studies/pioneering-a-lease-model-for-organic-cotton-jeans>
- Ellen MacArthur Foundation. "Philips & Turntoo: Selling light as a service". Available: <https://www.ellenmacarthurfoundation.org/case-studies/selling-light-as-a-service>
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- Ellen MacArthur Foundation. "Seeing the bigger picture" (videos). Available: <https://www.youtube.com/playlist?list=PLD2C43638C526D33F>
- Ellen MacArthur Foundation. "The Future of Cities". Available: <https://www.ellenmacarthurfoundation.org/assets/downloads/future-of-cities.pdf>

- The Ellen MacArthur Foundation (2013). "Towards the Circular Economy Vol. 1: an economic and business rationale for an accelerated transition". p. 13-62. Available: <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- Ellen MacArthur Foundation (2016). "The New Plastics Economy: Rethinking the Future of Plastics". p. 22-42, 44-72 & 86-96. Available: [https://www.newplasticseconomy.org/assets/doc/EllenMacArthurFoundation\\_TheNewPlasticsEconomy\\_Pages.pdf](https://www.newplasticseconomy.org/assets/doc/EllenMacArthurFoundation_TheNewPlasticsEconomy_Pages.pdf)
- Ellen MacArthur Foundation (2019). "New Plastics Economy: Reuse – Rethinking Packaging". p. Available: <https://www.newplasticseconomy.org/assets/doc/Reuse.pdf>
- Ellen MacArthur Foundation (2020). "The EU's Circular Economy Action Plan: Setting the world's largest single market on a transition towards a circular economy". Available: <https://www.ellenmacarthurfoundation.org/assets/downloads/EU-Case-Study-june2020-EN.pdf>
- European Commission. "Circular economy: Closing the loop – The production phase of the circular economy". Available: [https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-production\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-production_en.pdf)
- European Commission (2015). "Circular Economy Package: Questions & Answers". Available: [http://europa.eu/rapid/press-release\\_MEMO-15-6204\\_en.htm](http://europa.eu/rapid/press-release_MEMO-15-6204_en.htm)
- European Commission (2016). "A European agenda for collaborative economy". Available: <http://ec.europa.eu/DocsRoom/documents/16881/attachments/2/translations>
- European Commission (2018). "A European Strategy for Plastics in a Circular Economy". Available: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:28:FIN>
- European Parliament (2019). "Sustainable consumption and production". Available: <https://www.europarl.europa.eu/factsheets/en/sheet/77/sustainable-consumption-and-production>
- Geissdoerfer, Martin, Paulo Savaget, Nancy M. P. Bocken & Erik Jan Hultink (2017). "The Circular Economy – A new sustainability paradigm?" Journal of Cleaner Production. 143: p. 757–768.
- Olabi, Abdul Ghani (2019). "Circular economy and renewable energy". Energy. 181: p. 450-454. Available: <https://doi.org/10.1016/j.energy.2019.05.196>
- Raworth K., (2017). "Doughnut Economics – Seven Ways to Think Like a 21st-Century Economist". p. 111-138.
- Schor, J. (2014). "Debating the sharing economy". Available: <https://greattransition.org/publication/debating-the-sharing-economy>
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- Stahel, W.R. (2016). The circular economy. Nature 531, p. 435–438. Available: <https://www.nature.com/news/the-circular-economy1.19594>
- Strategyzer. "Business Model Canvas". Available: <https://www.strategyzer.com/canvas/business-model-canvas>
- Strategyzer. "Business Model Canvas Explained" (video). Available: <https://vimeo.com/78350794>
- United Nations. "12: Ensure sustainable consumption and production patterns". Available: <https://sdgs.un.org/goals/goal12>
- United Nations. "The 17 Goals". Available: <https://sdgs.un.org/goals>
- World Business Council for Sustainable Development. "Strategies and examples". Available: <https://www.ceguide.org/Strategies-and-examples>