



CIRCULAR ECONOMY



AI SYLLABUS

Course Title: Circular Economy: Principles and Practices

A course on circular economy provides an overview of the principles and practices of circular economy, which is an alternative economic model that seeks to promote sustainable use of resources and reduce waste. The course may cover topics such as circular business models, sustainable consumption and production, circular design, policy and regulatory frameworks, and the economic, environmental, and social benefits of circular economy. Students will learn about the key principles of circular economy and how they differ from the traditional linear economy. They will also explore case studies and real-world examples of circular economy practices and strategies, and learn how circular economy can be implemented in different industries and sectors. The course may include a combination of lectures, readings, group projects, and exams, and will be designed to encourage critical thinking and problem-solving skills, as well as a deep understanding of circular economy concepts and practices.

Key Topics:

1. Introduction to circular economy: Understanding the principles and concept of circular economy and how it differs from the traditional linear economy.
 2. Sustainable consumption and production: Analyzing the current state of global consumption and production patterns, and exploring ways to promote more sustainable practices.
 3. Circular design: Developing strategies for circular design and product development that prioritize resource efficiency, recyclability, and product longevity.
 4. Circular business models: Examining different circular business models, such as leasing, take-back systems, and product as a service, and understanding their benefits and challenges.
 5. Policy and regulatory frameworks: Evaluating the policy and regulatory frameworks needed to promote circular economy at the local, national, and international levels, and how stakeholders can collaborate to advance a circular economy.
 6. Supply chain management: Analyzing circular economy practices and strategies in supply chain management, and how circularity can be integrated into the supply chain.
- Case studies and real-world examples: Studying case studies and real-world examples of circular economy practices and their impacts on the environment, society, and the economy.

SYLLABUS

I. Course Description

- Brief [description](#) of the course, its [objectives](#), and how it will be [structured](#)
- Overview of the [topics](#) to be covered in the course

II. Learning Outcomes

- [Specific skills and knowledge that students will gain by taking the course](#)
- [How these skills and knowledge will be assessed](#)

III. Course Schedule

- Overview of the course schedule, including the dates of each class meeting and what topics will be covered in each class

IV. Required Readings

List of books, articles, and other materials that students will be required to read throughout the course
Discussion questions or prompts to help guide students in their reading

V. Course Assignments

- Description of the course assignments, including any writing assignments, group projects, or exams
- Rubrics or grading criteria for each assignment

VI. Classroom Policies

- Policies on [attendance](#), [participation](#), [late assignments](#), and [academic integrity](#)
- [Accessibility statement](#), outlining any [accommodations](#) available to students with disabilities

VII. Course Resources

- List of resources, including websites, databases, and online tools, that students can use to learn more about Circular economy
- [Contact information](#) for the instructor and any teaching assistants

Course Description:

This course provides an in-depth understanding of circular economy principles and practices, including sustainable resource management, regenerative systems, and sustainable consumption and production. Students will learn how to design for circularity, and the course will provide insight into the opportunities and challenges of implementing circular economy practices in different industries and sectors.

Course Objectives:

- To provide an overview of the principles and practices of the circular economy, including its history and evolution.
- To provide insight into the key principles and benefits of a circular economy and how it differs from the traditional linear economy.
- To explore different business models that can promote circularity and how they can be implemented in different industries and sectors.
- To understand the role of policy and regulation in promoting the circular economy.
- To examine the opportunities and challenges of transitioning to a circular economy.

Course Structure:

This course will be structured as a combination of lectures, class discussions, case studies, and group projects. Students will be required to read selected articles and research papers related to the topics covered in the course. There will be several individual and group assignments, including a research paper and a group project.

Topics Covered:

- Introduction to circular economy
- Circular economy principles and benefits
- Circular economy business models and their implementation
- Sustainable consumption and production
- Designing for circularity
- Circular economy policies and regulations
- Opportunities and challenges of transitioning to a circular economy

Overall, this course aims to equip students with the knowledge and skills necessary to promote sustainable economic growth and development through the circular economy.

Learning Outcomes:

By the end of the course, students will have gained the following skills and knowledge:

- A comprehensive understanding of the principles and benefits of a circular economy.
- Knowledge of different business models that promote circularity and how they can be implemented in different industries and sectors.
- An understanding of the importance of sustainable consumption and production and how it can be achieved through circular economy practices.
- Skills in designing for circularity, including the ability to identify and apply circular design principles.
- Knowledge of the role of policy and regulation in promoting the circular economy and the ability to assess and analyze the effectiveness of different policies and regulations.
- An understanding of the challenges and opportunities in transitioning to a circular economy.

Assessment:

The students will be assessed through a variety of assignments and assessments, including:

- Class participation and engagement
- Individual assignments, including research papers, case study analysis, and short answer questions
- Group project, where students will be required to analyze a real-world business or industry and develop a circular economy plan for it.
- A final exam that tests the students' knowledge of the course material.

Course Schedule

Week 1: Introduction to circular economy

- Overview of the course
- History and evolution of the circular economy
- Key principles and benefits of the circular economy

Week 2: Circular economy business models

- Product as a service
- Closed-loop supply chains
- Sharing economy

Week 3: Circular economy business models (cont'd)

- Remanufacturing
- Circular design

Week 4: Sustainable consumption and production

- The impact of consumer behavior on the environment
- The importance of sustainable production

Week 5: Designing for circularity

- Circular design principles and strategies
- Case studies in circular design

Week 6: Circular economy policies and regulations

- Extended producer responsibility
- Product standards and labeling
- Waste management policies

Week 7: Opportunities and challenges in transitioning to a circular economy

- Economic, environmental, and social benefits of the circular economy
- Challenges and barriers to adoption

Week 8: Group project presentations

- Group presentations of circular economy plans developed for real-world businesses or industries

Week 9: Review and final exam preparation

- Review of course material
- Discussion of final exam format and expectations

Week 10: Final exam

- A comprehensive exam covering all course material

Required Readings

1. "Cradle to Cradle: Remaking the Way We Make Things" by William McDonough and Michael Braungart (<https://a.co/d/1qHI13s>)
 - **Discussion question:** How does the concept of "cradle to cradle" differ from traditional "cradle to grave" manufacturing and design?
2. "The Circular Economy: A Wealth of Flows" by Ken Webster (<https://a.co/d/0D8mgBK>)
 - **Discussion question:** What are the key economic and environmental benefits of a circular economy?
3. "Towards the Circular Economy: Accelerating the Scale-up Across Global Supply Chains" by Ellen MacArthur Foundation (https://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf)
 - **Discussion question:** What are some of the barriers to scaling up circular economy practices in global supply chains, and how can these barriers be addressed?
4. "Circular Economy Handbook" by Peter Lacy, Jessica Long, Wesley Spindler, and Mark Esposito (<https://a.co/d/aFgpTHC>)
 - **Discussion question:** What are some practical strategies for implementing circular economy practices in different industries and sectors?
5. "Circular Business: Collaborate and Circulate" by Sharon Prendeville and Jane Penty
 - **Discussion question:** What are some of the challenges and opportunities of transitioning to circular business models, and how can these challenges be addressed?
6. "Circular by Design: Products in the Circular Economy" by European Environmental Bureau (<https://www.eea.europa.eu/publications/circular-by-design>)
 - **Discussion question:** What are some key design principles and strategies for promoting circularity in product design and development?
7. "The Circular Economy and the Global South: Sustainable Lifestyles and Green Industrial Development" by Walter Leal Filho, Luciana Brandli, and Carlos Lange Salvia
 - **Discussion question:** What are some of the unique challenges and opportunities of implementing circular economy practices in developing countries, and how can these challenges be addressed?

Course Assignments:

1. **Research paper:** Students will be required to write a research paper on a topic related to the circular economy. The paper should be 8-10 pages long and should demonstrate a thorough understanding of the relevant literature on the chosen topic. The grading criteria for this assignment may include the following:
 - Clarity and coherence of the paper
 - Quality of research and analysis
 - Relevance and originality of the chosen topic
 - Use of proper citation and referencing

2. **Case study analysis:** Students will be required to analyze a real-world case study of a company or industry that has implemented circular economy practices. The analysis should identify the key circular economy principles and strategies used by the company or industry, and assess their effectiveness in promoting sustainability and resource efficiency. The grading criteria for this assignment may include the following:
 - Depth and accuracy of analysis
 - Relevance and significance of the case study
 - Identification of key circular economy principles and strategies
 - Quality of writing and presentation

3. **Group project:** Students will work in groups to develop a circular economy plan for a real-world business or industry. The plan should identify the specific circular economy principles and strategies that will be used to promote sustainability and resource efficiency, and should include a detailed implementation plan. The grading criteria for this assignment may include the following:
 - Quality of research and analysis
 - Relevance and feasibility of the circular economy plan
 - Creativity and originality of the plan
 - Quality of writing and presentation

4. **Final exam:** The final exam will be a comprehensive exam covering all course material. The exam may include a combination of short answer questions, essay questions, and case study analysis. The grading criteria for this assignment may include the following:
 - Depth and accuracy of analysis
 - Knowledge and understanding of course material
 - Clarity and coherence of writing
 - Use of proper citation and referencing

Classroom Policies:

Attendance: Regular attendance is expected and will be taken at the beginning of each class. Students are responsible for attending all classes and arriving on time.

Participation: Class participation is essential to the success of this course. Students are expected to contribute to class discussions and activities, ask questions, and engage with the course material.

Late assignments: Late assignments will be penalized at the discretion of the instructor. Students are encouraged to submit assignments on time, and to communicate with the instructor in advance if an extension is needed.

Academic integrity: Students are expected to uphold the highest standards of academic integrity. Plagiarism, cheating, and other forms of academic misconduct will not be tolerated and will be subject to disciplinary action.

Accessibility statement: The instructor is committed to providing an inclusive and accessible learning environment for all students. Students with disabilities or who require accommodations are encouraged to speak with the instructor or contact the university's office of disability services to request accommodations.

Accommodations: The university provides reasonable accommodations to students with disabilities in accordance with the Americans with Disabilities Act (ADA). Students who require accommodations should contact the university's office of disability services as soon as possible to request accommodations. The instructor will work with the student and the office of disability services to ensure that reasonable accommodations are provided.

Course Resources:

1. **The Circulars:** The Circulars is an initiative of the World Economic Forum that aims to recognize and promote circular economy initiatives and leaders around the world. Their website features case studies, reports, and other resources related to circular economy practices.
2. **Circularity Metrics:** A platform developed by the Ellen MacArthur Foundation and the World Business Council for Sustainable Development (WBCSD), Circularity Metrics offers a variety of tools and resources for measuring circularity and sustainability performance in businesses and industries.
3. **The Circularity Gap Report:** Produced by the Circle Economy research institute, The Circularity Gap Report is an annual analysis of the current state of the global economy and its progress towards a circular model. The report includes insights and data on a range of circular economy topics.
4. **The Circularity Playbook:** Developed by the Ellen MacArthur Foundation, The Circularity Playbook is a comprehensive guide to implementing circular economy practices in different industries and sectors. The guide includes case studies, toolkits, and other practical resources.
5. **The Circular Economy Handbook:** Written by a team of circular economy experts, The Circular Economy Handbook provides a comprehensive overview of circular economy principles, strategies, and case studies. The book also includes practical guidance and advice for businesses and organizations looking to transition to a circular model.