



Sungkyunkwan University (SKKU) International Summer Semester (ISS) 2023

## Circular Economy

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### SHORT COURSE DESCRIPTION

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This interdisciplinary module explores business and enterprise opportunities when “digital meets business models meets design” of goods, services and systems. It is set within the general notion of a “circular economy”. Digital gave us insights into complex systems, full of feedback and pattern and it changed the relationship between people, resources, production, use and exchange. A linear, take-make-and-dispose mindset was ignoring feedback and leaving untapped value while exporting costs to society and the environment. This module will explore an emerging feedback rich framework for thinking and its application to business while setting its economic, environmental and philosophical context.

The course aims to set current circular economy business and enterprise opportunities in three main contexts and illustrate the main approaches.

**Context 1:** The intellectual context is a shift from largely mechanistic and atomistic worldview to systemic and networked in line with contemporary science of systems.

**Context 2:** The economic and business context is changing emphasis from production throughput to asset management and adding value in an extended era of low growth, stagnant wages and materials and resources constraints.

**Context 3:** A circular economy is then introduced as an approach to the question “*how do we produce?*” It is cognisant of the foregoing contexts and the changing balance of opportunities and barriers to change which result.

### READING MATERIALS

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All material, including lecture notes and journal papers (pdf) will be provided online and will be available on SKKU website.

### COURSE REQUIREMENTS AND GRADING

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The course will require students to attend lectures and participate during the lectures. Participation will often be in groups. This will count for 20% of the final grade. There will be a coursework, where you will have to write an essay on a topic given to you. Note that you will be able to select one topic from four possible topics. The details will be given to you at the start of the course. This will constitute 40% of the grade. You will also need to make a group presentation on a given topic for the class. This presentation will make up the remaining 40% of your final grade. Note **SKKU regulations require students to attend at least 80% of all classes.**

### COURSE SCHEDULE

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#### – WEEK I –

Monday (26 June) Introduction to Circular Economy

Tuesday (27 June) Circular Economy: Material concerns and Systems Thinking

Wednesday (28 June) Digital enablers of Circular Economy

Thursday (29 June) Enterprise networks and platforms

**– WEEK II –**

Monday (3 July) Open-source materials, software, maker labs, temporary materials stores

Tuesday (4 July) Systems Thinking: Products as service

Wednesday (5 July) Systems Thinking: Repair, repurpose, reuse - 1

Thursday (6 July) Repair, repurpose, reuse – 2

**– WEEK III –**

Monday (10 July) Policy and practice shaping Systems Thinking in Circular Economy -1

Tuesday (11 July) Policy and practice shaping Systems Thinking in Circular Economy -2

Wednesday (12 July) Bio-economy

Thursday (13 July) Biosphere, products of consumption. Issues of scale and regeneration (e.g., soil health)

**– WEEK IV–**

Monday (17 July) Economic systems and living systems.

Tuesday (18 July) What sort of economic system conditions might bring the insights about living systems, materials products and component flows into line?

Wednesday (19 July) Coursework presentation and feedback.