

SUS210 • Systems Thinking & Sustainability

School of Sustainability & Urban Systems • Undergraduate • 6 ECTS

Overview

Use systems thinking to analyze sustainability challenges: causal mapping, feedback loops, leverage points, and scenario reasoning. Students practice decision-making under uncertainty and build interventions that consider unintended consequences and constraints.

LOGISTICS

Credits: 6 ECTS

Level: Undergraduate

School: School of Sustainability & Urban Systems

Prerequisites: None listed

Tags: sustainability, systems, uncertainty

Meeting time: Weekly lecture + systems mapping studio

Instruction mode: Think in feedback loops and constraints; write decisions that can survive reality

LEARNING OUTCOMES

You will be able to:

- Create systems maps that include feedback loops and leverage points
- Reason about uncertainty and unintended consequences
- Propose interventions with measurable signals and accountability
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ASSESSMENT

Components

- Coursework: 60%
- Final project: 40%

Assessment is based on systems maps, short briefs, and a final intervention proposal. Strong work shows trade-offs and failure modes, not just ideal outcomes.

WEEKLY PLAN

Schedule

Week 1: Week 1

- Systems fundamentals: stocks, flows, and feedback

Week 2: Week 2

- Leverage points: where change is feasible

Week 3: Week 3

- Uncertainty: scenarios and sensitivity

Week 4: Week 4

- Measurement: signals that matter

Extended outline

- Systems fundamentals: stocks, flows, and feedback
- Leverage points: where change is feasible
- Uncertainty: scenarios and sensitivity
- Measurement: signals that matter
- Policy and implementation constraints
- Final: systems intervention proposal + risk register

POLICIES & RESOURCES

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- Be explicit about assumptions and what could go wrong.
 - Use evidence where possible; mark uncertainty clearly.
 - Academic integrity: cite data, models, and references.

Suggested resources

- Systems map template
- Leverage point checklist
- Scenario planning worksheet