

## Course Descriptions None 2026-2027

Course Title	Sustainability and Social-Ecological Systems																
Course Code	EBC2187																
ECTS Credits	5,0																
Assessment	Whole/Half Grades																
Period	<table border="1"> <thead> <tr> <th>Period</th> <th>Start</th> <th>End</th> <th>Mon</th> <th>Tue</th> <th>Wed</th> <th>Thu</th> <th>Fri</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31-8-2026</td> <td>16-10-2026</td> <td></td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> </tbody> </table>	Period	Start	End	Mon	Tue	Wed	Thu	Fri	1	31-8-2026	16-10-2026		X		X	
Period	Start	End	Mon	Tue	Wed	Thu	Fri										
1	31-8-2026	16-10-2026		X		X											
Level	Intermediate/Advanced																
Coordinator	Yvonne van der Meer, Andrew Oringer For more information: <a href="mailto:yvonne.vandermeer@maastrichtuniversity.nl">yvonne.vandermeer@maastrichtuniversity.nl</a> ; <a href="mailto:a.oringer@maastrichtuniversity.nl">a.oringer@maastrichtuniversity.nl</a>																
Language of instruction	English																
Goals	<p>Students are able to:</p> <ol style="list-style-type: none"> <li>1. Explain the structure and functioning of Earth's biogeochemical cycles, trophic dynamics, and climate system, including how human activities disturb these systems through changes in stocks, flows, and feedback mechanisms.</li> <li>2. Analyse the behaviour of coupled social-ecological systems using concepts of resilience, adaptive cycles, ecosystem services, and adaptive management.</li> <li>3. Evaluate the environmental impacts of production and consumption systems using the planetary boundaries framework, Life Cycle Assessment logic, and circular-economy principles, and propose strategies to reduce those impacts.</li> <li>4. Integrate knowledge from Earth-system science and production-system analysis to assess sustainability challenges in real world social-ecological systems using interdisciplinary reasoning.</li> </ol>																
Description	<p>Central to the pursuit of sustainable development is the integrated consideration of economic, social and environmental aspects. However, traditional scientific paradigms are based on reductionist thinking, which tries to understand things by taking them apart. In sustainability science, systems thinking is key to address the complex and interdependent nature of our coupled social-ecological systems. Many people recognize the need to transition to a sustainable and resilient society, but this requires new ways of thinking about and addressing complex problems. Widespread adoption of systems thinking is believed to be a precondition for making real progress towards sustainability, but few understand its importance. Systems thinking is a process for understanding the interrelationships among the key components of a system, including how changes in stocks, flows, and feedback mechanisms drive system behaviour over time.</p> <p>This course introduces students to systems thinking and how it can be applied to understand sustainability problems and challenges of coupled social-ecological systems. After familiarizing themselves with key concepts, students explore systems thinking across two interconnected areas. The first covers Earth systems and coupled social-ecological systems, including biogeochemical cycles, the climate system, trophic dynamics, and the principles of resilience, adaptive cycles, and ecosystem services. The second focuses on rethinking production and consumption systems, where students examine the planetary boundaries framework and explore the transition to a circular and biobased economy through topics such as value chain analysis, environmental impact assessment, and circularity principles. Throughout the course, students work towards integrating knowledge from both areas to assess real-world sustainability challenges in social-ecological systems using interdisciplinary reasoning.</p>																
Literature	Reference list will be provided																
Prerequisites	None																
Keywords																	
Transitional Regulations																	
Teaching methods	PBL / Presentation / Lecture / Assignment / Groupwork																
Assessment methods	Written Exam / Assignment / Presentation																
Evaluation in previous academic year	For the complete evaluation of this course please click <a href="http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM">http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM</a>																
This course belongs to the following programme / specialisation	<table border="0"> <tr> <td>UM-wide minors</td> <td>Minor Sustainability</td> </tr> <tr> <td>SBE Exchange Bachelor</td> <td>Minor Sustainability</td> </tr> <tr> <td>SBE Exchange Master</td> <td>Minor Sustainability</td> </tr> <tr> <td>SBE Non Degree Courses</td> <td>Minor Sustainability</td> </tr> </table>	UM-wide minors	Minor Sustainability	SBE Exchange Bachelor	Minor Sustainability	SBE Exchange Master	Minor Sustainability	SBE Non Degree Courses	Minor Sustainability								
UM-wide minors	Minor Sustainability																
SBE Exchange Bachelor	Minor Sustainability																
SBE Exchange Master	Minor Sustainability																
SBE Non Degree Courses	Minor Sustainability																