Sustainability Science and Policy

Core courses

SSP Core Courses

ICIS
Sustainable Development

Full course description

Sustainable development means different things to different people. Most definitions imply an appropriate balance between economic, ecological and social developments, the achievement of human well-being for all, and the balance between current and future generations, and between local and global developments. Students are challenged to assess the multiple dimensions, interlinkages and consequent trade-offs involved in the field of sustainable development by examining most important concepts and theories regarding the environment-economy-society interface from various disciplines. Throughout the course, students will discuss sustainable development in relation to its challenges for (sustainability) science and policy-making.

Students will explore the emergence of the concept of sustainable development, and the associated changing perceptions on both the environment and (human) development. This also includes the emergence of sustainable development on the international agendas, in particular exploring the UN-process. Accordingly, the course focuses on selected key concepts and theories illustrating the social-economic-environmental interlinkages and trade-offs involved in the field of sustainable development. Finally, global climate change will be discussed as a prototype of a sustainability problem, one which is expressed by a strong interrelationship between ecological, social and economic dimensions, with important consequences for current and future generations. Furthermore there is the uncertainty about the routes that should be followed to find a solution for this global problem.

Course objectives

• to explain the emergence of the concept of sustainability
• to recognize, analyze and explain the different worldviews and trade-offs at stake
• to apply their knowledge about relevant theories and concepts from different disciplines to gain a better understanding of the economic-ecological-social interrelations
• to adopt an interdisciplinary and integrative attitude towards the concept of sustainable development.

SSP2011

Period 1
3 Sep 2018
26 Oct 2018

Print course description
ECTS credits:
5.0
Coordinator:

M.M.T.E. Huynen
Teaching methods:
Lecture(s), PBL, Assignment(s)
Assessment methods:
Assignment, Written exam, Attendance

ICIS
Governance for Sustainable Development

Full course description

The quest for a sustainable society challenges our political-institutional system, where we observe a shift from a 'government-model' to 'governance-approaches'. However, like sustainable development, *governance* is a contested concept. It's about new relations between actors from different societal domains, such as the state, the market, and the civil society. It's about collective action by multiple actors, involving multiple sectors at multiple scale levels. It's about new multi-actor constellations, and their structures, institutions, processes, resources and instruments. It's about different modes of governance, depending on prevailing worldviews and perspectives.

This course provides a governance perspective on sustainable development. Governance practices at global, international, European and local level are examined, with an emphasis on cross-cutting policy issues such as collective action, steering and coordination, implementation, accountability and enforcement, and conflict resolution. New governance approaches which play a pivotal role in the social process towards a more sustainable world will be discussed, such as regimes, networks and partnerships. Students will learn that there are large differences between the different multi-level and multi-actor governance arenas in terms of stakeholder involvement and relevant trade-offs. Furthermore, students will learn that a good understanding of the relations and interdependencies between public administration, market parties, non-governmental organisations and civilians, but also the scientific community, is essential for governance in pursuit of sustainable development. An important element of this course is the link between theoretical concepts and their practical relevance, illustrated by case-studies.

Course objectives

After studying the course the students should be able:

- to define and explain the concept of governance (in theory and practice)
- to explain the interlinkages between governance and sustainable development
- to apply their knowledge about governance on real-world sustainability problems
- to analyse sustainable development challenges from a governance perspective
- to evaluate critically the idea of governance for sustainable development.

SSP2041

Period 2
29 Oct 2018
21 Dec 2018

Print course description
ECTS credits:

5.0
Coordinator:
C. Scholl
Teaching methods:
Lecture(s), Assignment(s)
Assessment methods:
Assignment, Attendance, Oral exam

ICIS
Sustainability Science, Policy and Society

Full course description

In matters of sustainable development, policy making and knowledge production are entangled in many ways. Policy makers, for instance, will need scientific knowledge to justify and target their plans. Likewise, scientists hope to make their findings about sustainability useful and to inform policy makers. In this course we will investigate the various ways in which scientific knowledge production and policy making are intertwined or clash. Starting from the angle of policy, we will look into the nature of policy problems, which, in the case of sustainable development, often are ill-structured and open ended. From the angle of science, we will consider the different strategies open to scientists to make their knowledge useful. Attention will also be given to the ways in which the science 'system' is changing, in particular the shift from normal or mode-1 science to post-normal or mode-2 science. This raises pertinent questions about what knowledge is in the first place and its role in solving policy problems characterized by dissent and uncertainty.

Sustainability science is aimed at understanding and generating useful knowledge through problem-focused analysis, integration, attention to cross-scale dimensions of human-environment interactions and boundary spanning at the interface of research and practice. In the course, students will learn about boundary work at the interface of science and society and sustainability science as an emerging field of science.

Some questions that will come up in the discussions:

• What strategies do scientists have to make their knowledge useful and can they prevent misuse of their science?
• Does more information always help to make better decisions?
• Should science compel action, for instance when new facts about the severity of climate change are uncovered?

Course objectives

• to understand the social element in the dynamics of problem definitions
• to use theories and methods of problem structuring
• to understand processes of research use
• to name and understand different roles of scientists in complex problems and their suitability in different contexts
• to explain the theories and concepts of sustainability science
• to uinderstand the concept of boundary work: its challenges and relevance in sustainable development
• to recognize and reflect on ethical and normative aspects of sustainability science for policy making

SSP2031

Period 1
3 Sep 2018
26 Oct 2018

[Print course description](#)
ECTS credits:
5.0
Coordinator:
[A.E. van Zeijl - Rozema](#)

ICIS

Integrated Sustainability Project

Full course description

The Sustainability Assessment project requires students to compare, combine and integrate different concepts, methods and tools, and transferring them to the case study context in order to develop a sound research plan, which will be carried out by the student project team during the course. In groups, students will further develop essential skills and sharpen their ability to design, conduct and evaluate a sustainability assessment on a real-life case study. Ample attention will be paid to the challenges that can emerge when applying these methods and tools in practice. This includes dealing with uncertainty, incomplete information, data quality, indicators, critical assumptions, different perspectives etc. Moreover, the relations between the selected tools ('how tools work together') will be discussed. The students will be coached on the contents and scientific quality of their assessment and on their skills in conducting integrative research. At the end of the course, project work and results (including policy recommendations) will be presented in student presentations and project reports.

This course is designed around the Project-Centred Learning (PCL) educational model, in which students work together in a project team on a specific sustainability case study. Just as Problem-Based Learning, the PCL model is small scaled and student oriented. Building on previous courses, lessons learned are applied to a typical sustainability issue (case study) and associated research

question(s) chosen at the beginning of the course.

Course objectives

- carry out a sustainability assessment for a real-life case as part of a project team;
- develop an integrated description of a complex societal problem;
- identify and formulate policy options/ strategies to deal with such problems;
- assess and compare alternative policy options;
- formulate recommendations for the relevant client/ policy makers;
- advise on ex-post monitoring, evaluation and learning;
- reflect on the sustainability assessment process and draw lessons from it

SSP2071

Period 5
8 Apr 2019
7 Jun 2019

[Print course description](#)
ECTS credits:
5.0
Coordinator:
[M.M. Dijk](#)

ICIS

Sustainability, Law and the Environment

Full course description

Given the existence of global environmental problems, it is of utmost importance to have adequate international law approaches in order to steer the behavior of governments and private actors towards more sustainable behavior. At the same time, the international community has acknowledged that environmental law should not have a single environmental focus and that law should be developed on the basis of a balance between economic, social and environmental concerns. It is however not easy to reconcile the often single-focused legal approaches, based on competences for regulatory action, with such a broad balancing of different interests.

In order to examine current trends, main dilemma's and possible ways forward regarding the role of law for a sustainable environmental protection this course uses three perspectives: 1) the *government* perspective with a discussion of international environmental rulemaking and unilateral regulatory approaches; 2) the *business* perspective with attention to liability and voluntary approaches like Corporate Social Responsibility; 3) The *victim* perspective including the position of environmental non-governmental organizations, discussing inter alia procedural rights like access to information.

The problem of climate change serves as the core case for the course. Particular attention will go to regulatory instruments, ranging from traditional command and control to market-based regulatory approaches like "carbon trading". After the course, it will be easier for students to understand the thinking of lawyers and, moreover, have a basic idea of the role that law can play - including its shortcomings - in the pursuit of sustainability.

Course objectives

• to understand the main characteristics and trends of international environmental law;
• to explain main dilemma's like how to reconcile sustainable development with legal decision-making and how to strengthen compliance;
• to discuss potential ways forward like a shift from uniform global approaches to polycentrism.

SSP2052

Period 4
4 Feb 2019
5 Apr 2019

ECTS credits:
5.0
Coordinator:
M.G.W.M. Peeters

ICIS
Methodology for Sustainability Assessment

Full course description

To facilitate policymaking in the pursuit of sustainable development, sustainability assessment can assist in the task of making both problems and solutions more concrete. An important element is problem structuring: the analysis of drivers, uncertainties and problem perceptions pertaining to the sustainability issue under investigation. It also includes the exploration of possible future pathways, and the evaluation of multiple policy strategies through which sustainable development might be pursued.

This course will deepen the students' understanding and knowledge of sustainability assessment (SA). It starts with an appreciation of the concept of sustainability assessment and an investigation of different sustainability assessment frameworks that can be used. Following this, students will explore several SA methods and tools, focusing on modelling, scenario development, and participatory methods. Students will not only study how these tools and methods are currently used in practice, but also gain 'hands-on' experience by applying different methods and tools in working groups. A central theme of this course is how different methods and tools are combined in a coherent SA. To this end, the development of a sustainability assessment project plan is a key course product.

Course objectives

• explain the concept of sustainability assessment, understand its generic steps and the policy context(s) in which it may be applied;
• understand how various methods and tools can be combined and integrated in an SA
• analyse sustainability assessment studies from the literature, recognize which approach and tools are applied and why, and critically assess the results;
• design a sustainability assessment project by applying the generic steps of an SA and integrating different methods and tools in a complementary and consistent way.

SSP2062

Period 3
7 Jan 2019
1 Feb 2019

Print course description
ECTS credits:
5.0
Coordinator:
M.M. Dijk
Teaching methods:

Lecture(s), PBL

ICIS
Innovation for Sustainable Development

SSP2081

Period 2
29 Oct 2018
21 Dec 2018

[Print course description](#)
ECTS credits:
5.0
Coordinator:
[V. Vasseur](#)

ICIS
Global Dynamics of Sustainable Development

Full course description

Globalisation – in the broadest sense of the word – is one of the central phenomena of our times. But what is globalisation exactly? And what does it mean for sustainability? In order to explore sustainable development in a rapidly evolving and complex global system, a thorough understanding of the dynamics of global change and globalisation is essential. The increased extensity, intensity and velocity of the interactions between various social, economic, ecological, and technological changes at the global scale result in unprecedented trans-border processes and effects. The linkages between global processes and (un)sustainability are modified by multiple factors interacting at various scales, which cannot be studied in isolation from each other. Additionally, the underlying processes are not fully understood, and might behave in unpredictable ways. Such systems are characterized by non-linearity, feedback loops, thresholds and uncertainty. The increasing awareness that a more system-based approach towards (global) sustainability is required, is in line with the more general 'complexity turn' in science.

This course will explore the global dynamics of sustainable development. Students will connect important global sustainability issues (e.g. climate change and development) with complexity and system thinking, and will discuss important challenges for (sustainability) science and policy-making.

Course objectives

• explain relevant theories and perspectives on globalization;
• evaluate globalization processes and global change in the context of sustainable development and sustainability science;
• apply concepts of complexity and system thinking to relevant real-life sustainability issues:
• adopt interdisciplinary and integrative attitude towards the complex interrelationship between the

environment and society in the context of globalization.

SSP2021

[Print course description](#)

ECTS credits:

5.0

Coordinator:

[W.J.M. Martens](#)

Teaching methods:

Assignment(s), Lecture(s), PBL

Assessment methods:

Assignment, Take home exam

Skills

SSP Skills Training

ICIS

Seminar Series

Full course description

In the Seminar Series guest speakers from different societal domains such as government, business, civil society and science present their ideas and latest work in the field of sustainable development, and share their experiences with students.

The aim of the Seminar Series is to learn from each other. For students it is an excellent opportunity to challenge the views of leading scholars, professionals and practitioners, to form their own opinion about the ideas and work presented, to reflect on the practical usefulness of the Master programme, and to meet interesting persons. The speakers benefit from the critical remarks of the students and the exchange of viewpoints.

The Seminar Series is offered throughout the duration of the Master programme. Active participation is required and you have to write a paper reflecting on the lessons learned from the seminars.

The theme of the Seminar Series may differ per year (e.g. 'Sustainable development in practice: professionals at work', 'Sustainable development requires boundary work', 'What is sustainable in the end?')

SSP1071

Year

1 Sep 2018

31 Aug 2019

[Print course description](#)

ECTS credits:

1.0
Coordinator:
A.L.H. van Bogaert

ICIS
PBL and Academic Skills

Full course description

This master's course aims to equip students with the communications competences required of sustainability professionals, whether in the public, private, or social sector. The knowledge and expertise students acquire throughout the master's programme must be communicated effectively to a wide audience to leverage impact for sustainable development. The course includes two core components addressing writing and presenting, and is complemented by trainings in PBL (Problem-Based-Learning) and Intercultural Communication.

The course component in academic writing is geared towards sharpening the focus of written, research-related texts and at weaving several, critically evaluated arguments skilfully into a coherent storyline. In addition, overcoming common challenges for academic writers are tackled: the effective search for relevant literature and correct referencing using the latest software. Presentation skills are practiced in several settings and sessions to support students in arriving at a higher level of mastery and placidity. The Problem-Based Learning training aims to provide students with an understanding of what the PBL-method entails, how it aids the teaching and learning process, and how it is implemented in tutorial sessions. The Intercultural Communication training focusses on enabling students from so many different countries and cultures to effectively and empathetically manage group dynamics in the exchange of knowledge, thoughts and ideas. In the spirit of live-long learning and personal development, this course also provides students with the tools to continuously reflect and further develop their own as well as the skills of their course-mates in several peer-to-peer feedback sessions.

Course objectives

• Prepare and deliver a good presentation,
• Give, receive and make use of (peer-to-peer) feedback,
• Run systematic literature searches and reference sources correctly,
• Develop a balanced and critical eye for their own and other's work,
• Improve writing skills by learning about the pre-writing, writing and editing processes,
• Draw from creativity and design to structure sound logic and reasoning in a clear and impactful manner,
• Understand their own and other's cultural standpoints, allowing for empathy across them to bolster group dynamics,
• Study in a Problem-Based Learning system, take on different roles in a tutorial group session, and contribute to effective, student-centred, peer-to-peer learning.

SSP1022

Period 1
3 Sep 2018
26 Oct 2018

ECTS credits:
2.0
Coordinator:
A.E. van Zeijl - Rozema

ICIS
Sustainability Assesment Skills

Full course description

Sustainability Assessment (SA) can be defined as a structured process dealing with a sustainability issue, using knowledge from various scientific disciplines and/or stakeholders, such that integrated insights are made available to decision makers. Applying SA in practice requires specific skills. The aim of this skills course is that students learn to apply some widely-used methods/tools of SA, and become familiar with its rules of application, strengths, and pitfalls.

The course encompasses four different elements (or sub-courses): Participatory Methods, Basic Modelling, Foresight, and Multi-criteria analysis (each sub-course equals 1 ECTS)

Participatory Methods
Stakeholder participation and citizen involvement are considered increasingly important in today's research and decision making. When dealing with complex issues such as sustainable development, it is unlikely that single actors have all the knowledge to properly define problems, to identify solutions, to assess these solutions and to evaluate the outcomes.

In this skills course you learn how to use Participatory methods in the different steps of a sustainability assessment trajectory. You will also learn to critically reflect upon the concept, and use, of participation.

The emphasis of this course is on practicing skills that will make you feel more familiar and acquainted with the concept, and organization, of participation. After familiarizing yourself with some theoretical background knowledge, you will practice with developing a stakeholder analysis, developing a participatory process design, and the construction of a workshop script. At the end of the course you will organize and simulate a workshop session with your fellow students. You will use one or more participatory techniques to achieve the intended results.

Introduction to Modelling
A multitude of complex modelling approaches is currently used to assist in solving societal problems. After a general introduction to Integrated Assessment (IA) models, students are introduced to qualitative system dynamics modelling applied to a sustainability case. Students will practice using quantitative models as well.

In this way the students develop an insight into the basic components, mechanisms, limitations and assumptions of which several contemporary IA models consist. The systems analysis and problem structuring skills that are required to be able to build models are useful skills to implement in other IA methods as well.

Scenarios
One of the core questions in sustainability science is 'How can the future be scanned in a creative, rigorous and policy-relevant manner that reflects the normative character of sustainability and incorporates different perspectives?" (Swart et al 2004). This course offers insight and practical

exercise in key foresight approaches such as trend analyses and scenario development.

Multi-criteria analysis
In this SAS sub-course we focus on policy analysis, what can be defined as an action-oriented or intervention-oriented activity, which examines what policy or different policy options achieve, given a set of goals. Policy analysis can contribute to Sustainability Assessment (SA), and in particularly the 3rd step of SA: the assessment of policy options for a policy problem. MCA is a method for evaluating multiple (conflicting) criteria in a policy context. The idea is that structuring complex problems well and considering multiple criteria explicitly leads to more informed and better decisions. This SAS sub-course focuses on MCA, and critically evaluates its application to real-world sustainability problems.

SSP4011

Period 1
3 Sep 2018
26 Oct 2018
Period 2
29 Oct 2018
21 Dec 2018
Period 3
7 Jan 2019
1 Feb 2019

Print course description
ECTS credits:
4.0
Coordinator:
A.G.E. Offermans
Teaching methods:
Skills
Assessment methods:
Attendance, Assignment

Thesis

Thesis (seminar)

ICIS
Thesis Research and Writing

Full course description

The thesis trajectory of the Master SSP programme consists of two phases: first, the Thesis Research Proposal (SSP3011) and second, the Thesis Research, Writing and Presenting period (SSP3021).

The Master's thesis builds on knowledge, attitude and skills (competencies) you have acquired in the courses of the SSP programme. Content-wise, your thesis should focus on a real-world sustainable

development problem and comprise an (integrative) analysis that might result in recommendations for further research and/or policymaking in pursuit of sustainable development. Methodologically, your thesis should be based on a scientific approach in the emerging field of Sustainability Science and, where appropriate, makes use of different methods for data collection and analysis.

The Thesis Research, Writing, and Presenting period is scheduled after the other courses of the SSP programme. The entry point is your final Thesis Research Proposal (TRP). During this period most of your time will be spent on doing research (e.g., reading literature, collecting data, analyzing data) before you start writing your thesis. You submit drafts of the thesis (or parts of it) to your supervisors, and meet according to the time schedule your supervisors and you agreed. A good thesis gives a clear description of what you have done. It should not be a description of what you are planning to do. The research is done, and in the thesis you report it.

After completion and approval by the supervisors, you present your research to your supervisors, classmates and others interested in the topic. There are two rounds for presenting: in early July and in late August.

Through your Master thesis you show that you are competent to organize and implement a piece of independent scientific research on your own, and that you are able to write up an account of that research in a report, and present it publicly. Your supervisors will guide you during this process, but you are mainly responsible for your own research and writing.

Your Master's thesis can be an important 'entrance ticket' for your further career. So, make the best of it!

SSP3021

Period 5
8 Apr 2019
7 Jun 2019
Period 6
10 Jun 2019
5 Jul 2019

[Print course description](#)
ECTS credits:
15.0
Coordinator:
[R.J.M. Cörvers](#)

ICIS
Thesis Proposal Seminar

Full course description

The thesis trajectory of the Master SSP programme consists of two phases: first, the Thesis Research Proposal (SSP3011) and second, the Thesis Research, Writing, and Presenting period (SSP3021).

Delivering a Master's thesis is a demanding task. It may be your first experience in developing crucial generic research skills. These skills concern, in particular, identifying a relevant research topic,

studying the literature to identify knowledge gaps, formulating research questions, selecting a suitable research strategy and methods, planning your research and organizing time, collecting and analysing data, reporting your research in a thesis, and presenting it to your supervisors.

From a students' perspective, the thesis trajectory is above all an individual process where you have to prove that you can organize and implement a piece of scientific research completely on your own. The experience at Maastricht University and elsewhere is that slow progress in the thesis process is a common cause for study delay. Preventing slow progress in the development and completion of the thesis is a top priority for the programme. Therefore, the course introduction and thesis market will already be held in December.

In the Thesis Research Proposal (TRP) course, which will run for several months, you will work on your research proposal. The course aims to be a learning community of students under guidance of the course coordinators and supported by the thesis supervisors. In the course specific attention is given to formulating scientific research questions and selecting suitable research methods. During tutorials students present their research questions, research methods, and TRP outline, and provide feedback to others. At the end of the course each student should have a final TRP, which is the entry point for the Thesis Research, Writing and Presenting period (SSP3021).

Recommended reading

In the TRP course we use Martyn Denscombe's book *Research Proposals – A Practical Guide* (2012), 178 pages, Open University Press.

SSP3011

Period 3
7 Jan 2019
1 Feb 2019
Period 4
4 Feb 2019
5 Apr 2019

[Print course description](#)
ECTS credits:
3.0
Coordinator:
[R.J.M. Cörvers](#)

ICIS

Research Approaches and Methods

SSP3031

Period 4
4 Feb 2019
5 Apr 2019

Print course description

ECTS credits:

2.0

Coordinator:

A.G.E. Offermans

Print course description

ECTS credits:

2.0

Coordinator:

A.G.E. Offermans