14277.0206: Information Systems and Environmental Sustainability

Course Coordinator: Jan Recker, extension 5397, jan.recker@wiso.uni-koeln.de

Goals of this Course

On completion of this unit, students should be able to…

...understand relevance and requirements of organizational sustainability.
… distinguish and evaluate different sustainability metrics and measures
… understand the difference between sustainable information technology and sustainable information systems
… understand and apply different approaches to sustainable information systems development, use and management.
… differentiate and critically evaluate various sustainability requirements for information systems.
.. understand how information systems can enable digital solutions for a sustainable society

Contents of this Course

The following list of topic exemplifies the contents covered:

- Sustainable development and sustainability challenges
- Sustainability metrics and measures
- The transformative potential of information systems for sustainability
- Green IT
- Green IS
- IS-enabled sustainability phenomena
- IS as a sustainability problem
- IS as a sustainability solution

Assessment

Written Individual Exam (100%) of 90 minutes length. The exam will be completed as an electronic exam.

Literature

Relevant papers and other reading materials will be made available via ILIAS.

Location

*** Covid-19 Pandemic Update ***

As of now, teaching this course will be entirely online, using digital formats for teaching and learning. This allows maximum flexibility in learning the contents and progressing your learning at your own leisure and pace.

If regulations allow face-to-face teaching, we have reserved **411 Seminarraum 3.02 (Pohligstraße 1, 50969 Köln)**.

Course Conduct

Course contents will be explored in **3h weekly workshops**. The workshops have three foci:

- Covering ant topical, theoretical and technical knowledge about information systems and environmental sustainability.
- Developing IS-enabled solutions to selected sustainability challenges
- Discussing the transformative potential of information systems for organizational sustainability

Effectively, this means that the workshops will include lecture-type presentations on relevant topics. They will also involve group work where develop, discuss or evaluate IS-enabled digital solutions to selected sustainability problems. More details will be given in the first workshop.

Roughly, the schedule for each 3h workshop is as follows (not necessarily in this order):

1. 45-60min lecture on key contents relevant to the week's topic area.
2. 45-60min group work (typically in teams of about 4-5 students) on tasks relevant to the week's topic area.
3. 45-60min presentation and discussion of team solutions.

We will include appropriate breaks. The workshops run from 10.00-13.00, with 30 min slack for overflow/breaks.

Schedule and Topics

On selected topics for the contents listed below, we will have external scientists as guest speakers.

Block	Week	Date	Topic
	1	3/11/20	Introduction: Digital Solutions to Sustainability Challenges
Introduction: Sustainability Challenges	2	10/11/20	Sustainable Development Goals: Economic, Social and Environmental Dimensions
	3	17/11/20	Sustainability Transformations of Organizations and Households
Selected IS Sustainability Phenomena	4	24/11/20	Green IS versus Green IT
	5	1/12/20	Circular Economy
	6	8/12/20	e-Waste
IS solutions for sustainability challenges	7	15/12/20	IS solutions for Sustainable Mobility
	8	22/12/20	IS solutions for Sustainability Sensemaking
	9	12/01/21	IS solutions for Emergency and Disaster Management
Approaches to building IS solutions for sustainability challenges	10	19/01/21	Green IS Design
	11	26/01/21	Digital Eco-nudging
	12	02/02/21	Gamification
	13	09/02/21	Review and Mock exam
EXAM		**16/2/21**	**Electronic Exam (60 minutes)**