PIA5058: SUSTAINABILITY INFRASTRUCTURES AND MEASUREMENTS

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Sustainability Infrastructures and Measurements

Subject Code
PIA - Public and International Affairs
Course Number
5058

Academic Unit
Public and International Affairs (PIA)

College/School
College of Liberal Arts and Social Sciences (CH)

Course Duration
One Semester

Credit Units
2

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

The course aims to introduce students from a general and interdisciplinary background the major approaches and instruments in use in the discipline of sustainability across the design, finance, construction and operation phases. Students learn about the different ways in which "sustainability" is broadly defined, understood and measured, by different disciplines and professionals. The notion of sustainability is the subject of intense debate. The evolutionary context and development of sustainable development, values and methods are presented and discussed.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Discuss the evolution of sustainability as a concept that can be applied to the fields of various social systems.		x		x
2	Analyse why policy and decision making requires more than just scientific information but is influenced by society, values, culture and economics.		x	x	
3	Critically evaluate and communicate different views on sustainable practice.		x	x	
4	Critically reflect on professional practice strategies that support sustainable development.			x	x
5	Apply principles of Sustainability.				x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Lecturers, Videos	1, 2, 3, 4, 5	
2	Presentation	Participation in lectures, including presentation of case studies	1, 2, 3, 4, 5	
3	Individual Essay	Students will prepare an essay on an urban sustainability issue to reflect their critical thinking and analytical ability on the given topic.	1, 2, 3, 4, 5	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	In-class participation and group seminar/case presentation	1, 2, 3, 4, 5		
2	Individual essay	1, 2, 3, 4, 5		around 3,000 words excluding references
3	Project report and oral presentation	1, 2, 3, 4, 5		

Continuous Assessment (%)

0

Assessment Rubrics (AR)

Assessment Task

In-class participation and group seminar/case presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Students' presentation performance

Excellent

(A+, A, A-) The student has an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Good

(B+, B, B-) The student has a good knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Fair

(C+, C, C-) The student has a rudimentary knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Marginal

(D) The student has a limited knowledge of the role and sustainability issues and is fairly able to relate sustainable development to the built environment in a creative and innovative way.

Failure

(F) The student knows almost nothing about the role and sustainability issues. The student has failed to link sustainable and development.

Assessment Task

Individual essay (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Quality of students works

Excellent

(A+, A, A-) The student has an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Good

(B+, B, B-) The student has a good knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

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Failure

(F) The student knows almost nothing about the role and sustainability issues. The student has failed to link sustainable and development.

Assessment Task

Project report and oral presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Report's quality and presentation performance

Excellent

(A+, A, A-) The report reflects an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Good

(B+, B, B-) The report reflects a good knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Fair

(C+, C, C-) The report reflects a rudimentary knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Marginal

(D) The student has a limited knowledge of the role and sustainability issues and is fairly able to relate sustainable development to the built environment in a creative and innovative way.

Failure

(F) The report reflects almost nothing about the role and sustainability issues. The report has failed to link sustainable and development.

Assessment Task

In-class participation and group seminar/case presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Students' presentation performance

Excellent

(A+, A, A-) The student has an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Good

(B+, B) The student has a good knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Marginal

(B-, C+, C) The student has a rudimentary knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

Failure

(F) The student knows almost nothing about the role and sustainability issues. The student has failed to link sustainable and development.

Assessment Task

Individual essay (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Quality of students works

Excellent

(A+, A, A-) The student has an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

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Assessment Task

Project report and oral presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

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(A+, A, A-) The report reflects an excellent knowledge of the role and sustainability issues and is able to relate sustainable development to the built environment in a creative and innovative way.

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Failure

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Part III Other Information

Keyword Syllabus

Sustainability; Environmental Science and Engineering; Defining Sustainability; Sustainable Development; Metrics of Sustainability; Ethics and Values in Sustainability Thought; Corporate Sustainability Reporting; Sustainability Management.

Reading List

Compulsory Readings

	Title
1	The principles of sustainability. Simon Dresner. London; Sterling, VA: Earthscan, 2008
2	Lackey, R. (2006) Science, scientists and policy advocacy# Conservation Biology, 21 (1) pp.12-17.
3	Environmental issues: an introduction to sustainability McConnell, Robert L. Prentice Hall, c2008.
4	Warren-Rhodes, K., and A. Koenig, Escalating trends in the urban metabolism of Hong Kong: 1971-1997, Ambio, 30, 429-438, 2001.
5	Yuichi Moriguchi and Seiji Hashimoto, Material Flow Analysis and Waste Management. In: Roland Clift and Angela Druckman Editors, 2016. Taking Stock of Industrial Ecology. Springer.
6	Environmental Science: Earth as a Living Planet, 9th Edition. Daniel B. Botkin, Edward A. Keller. February 2014
7	Parris, T.M., and R.W. Kates, Characterizing and measuring sustainable development, Annuals Reviews of Environment and Resources, 28, 559-586, 2003.
8	Marshall, J.D., and M.W. Toffel, Framing the elusive concept of sustainability: A sustainability hierarchy, Environmental Science & Technology, 39, 673-682, 2005.
9	Lubin D.A., D.C. Esty. 2010. The sustainability imperative. Harvard Business Review, 2011
10	Gunningham, 2003. “Sources of Corporate Environmental Performance.” California Management Review, 46(1).
11	4. Principles of environmental sciences. Jan J. Boersema, Lucas Reijnders, editors. Springer e book 2009
12	Peter S. Wenz, Environmental Ethics Today, NY: Oxford, 2001, Chapters 1-3, pp. 19-78.
13	Mikael Stenmark (2002) “Anthropocentric Environmental Ethics”, in Environmental Ethics and Policy-Making, Ashgate: Aldershot, England, pp. 19-56
14	Xueying Yuan, Zhongfei Li, Jinhua Xu, Lixia Shang, ESG disclosure and corporate financial irregularities – Evidence from Chinese listed firms, Journal of Cleaner Production, Volume 332, 2022, 129992.
15	Sustainability: A Comprehensive Foundation (2011). Thomas L. Theis and Jonathan Tomkin, editors. University of Illinois on-line text.
16	Chapter 15: Sarah Sim, Henry King, and Edward Price, The Role of Science in Shaping Sustainable Business: Unilever Case Study. In: Roland Clift and Angela Druckman Editors, 2016. Taking Stock of Industrial Ecology. Springer.
17	Chapter 17: Kirstie McIntyre and John A. Ortiz, Multinational Corporations and the Circular Economy: How Hewlett Packard Scales Innovation and Technology in Its Global Supply Chain. In: Roland Clift and Angela Druckman Editors, 2016. Taking Stock of Industrial Ecology. Springer.

Additional Readings

	Title
1	Online resources: N.A.