PIA6504: PRACTICE IN SMART CITY MANAGEMENT

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Practice in Smart City Management

Subject Code
PIA - Public and International Affairs
Course Number
6504

Academic Unit
Public and International Affairs (PIA)

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

Course Duration
One Semester

Credit Units
3

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

This course aims to provide students with interdisciplinary knowledge and practice of how innovations in technology, design, planning, and policy can improve urban living and quality of life - at both a local and global level. Learning materials and activities will cover how the application of disruptive technology, such as artificial intelligence (AI), blockchain, the Internet of Things (IoT), and data analytics, can solve urban challenges and increase resource efficiency. Based on principles of participative learning, the course further enables students to gain knowledge and develop skills experience in integrating ingredients in technology, social sciences, and management for innovating smart city solutions.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Understand digital technologies and data science principles in the design and operation of smart cities		x	x	
2	Understand how social analytics enable business intelligence capabilities and be able to apply the concepts to smart city domains		x	x	
3	Equip students with solution development skills and evidence-based reasoning to smart city innovations			x	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	Structured seminars	Structured seminars on policy, business, and social implications of smart city innovations	1, 2	
2	Problem set of data science	Take home quiz on data science principles in the design and operation of smart cities	1	
3	Group presentation	Design and report an innovative project based on digital technologies	2, 3	
4	Completion of test	In-class test	1, 2, 3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Class attendance & participation	1, 2	10	-	No
2	Individual digital literacy assessment	1, 2	25	-	Yes
3	Group presentation	2, 3	20	-	No
4	Individual project	1, 2	45	-	No

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

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

Criterion

Active participation in class

Excellent

(A+, A, A-) Actively participate in class discussion with insightful speech and show excellent demonstration of knowledge, understanding, and interpretation of concepts

Good

(B+, B, B-) Actively participate in class discussion and show good demonstration of knowledge, understanding, and interpretation of concepts

Fair

(C+, C, C-) Rarely participate in class discussion and show basic demonstration of knowledge, understanding, and interpretation of concepts

Marginal

(D) Rarely participate in class discussion and show poor demonstration of knowledge, understanding, and interpretation of concepts

Failure

(F) No participation in class discussion with inadequate demonstration of knowledge, understanding, and interpretation of concepts

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Assessment Task

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

Criterion

Take home quiz on data science principles in the design and operation of smart cities

Excellent

(A+, A, A-) Excellent ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Good

(B+, B, B-) Good ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Fair

(C+, C, C-) Basic ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Marginal

(D) Poor ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Failure

(F) Inadequate ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Assessment Task

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

Criterion

Design and report an innovative project based on digital technologies

Excellent

(A+, A, A-) Excellent demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Good

(B+, B, B-) Good demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Fair

(C+, C, C-) Basic demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Marginal

(D) Poor demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Failure

(F) Inadequate demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

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Assessment Task

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

Criterion

In-class test

Excellent

(A+, A, A-) An excellent level of understanding of materials covered during all thirteen weeks of the course

Good

(B+, B, B-) A good level of understanding of materials covered during all thirteen weeks of the course

Fair

(C+, C, C-) A basic level of understanding of materials covered during all thirteen weeks of the course

Marginal

(D) A poor level of understanding of materials covered during all thirteen weeks of the course

Failure

(F) An inadequate level of understanding of materials covered during all thirteen weeks of the course

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Assessment Task

Attendance & participation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Active participation in class

Excellent

(A+, A, A-) Actively participate in class discussion with insightful speech and show excellent demonstration of knowledge, understanding, and interpretation of concepts

Good

(B+, B) Actively participate in class discussion and show good demonstration of knowledge, understanding, and interpretation of concepts

Marginal

(B-, C+, C) Rarely participate in class discussion and show basic demonstration of knowledge, understanding, and interpretation of concepts

Failure

(F) No participation in class discussion with inadequate demonstration of knowledge, understanding, and interpretation of concepts

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Assessment Task

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

Criterion

Take home quiz on data science principles in the design and operation of smart cities

Excellent

(A+, A, A-) Excellent ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Good

(B+, B) Good ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Marginal

(B-, C+, C) Basic ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Failure

(F) Inadequate ability to apply what has been learned over the semester to analyse data in the context of smart cities.

Assessment Task

Group presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Design and report an innovative project based on digital technologies

Excellent

(A+, A, A-) Excellent demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Good

(B+, B) Good demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Marginal

(B-, C+, C) Basic demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

Failure

(F) Inadequate demonstration of knowledge, understanding, and interpretation of digital technologies in use of smart city management

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Assessment Task

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

Criterion

In-class test

Excellent

(A+, A, A-) An excellent level of understanding of materials covered during all thirteen weeks of the course

Good

(B+, B) A good level of understanding of materials covered during all thirteen weeks of the course

Marginal

(B-, C+, C) A basic level of understanding of materials covered during all thirteen weeks of the course

Failure

(F) An inadequate level of understanding of materials covered during all thirteen weeks of the course

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Part III Other Information

Keyword Syllabus

Co-creation, Data Analytics, Innovation, Liveability, Smart Systems, Sustainability Urban Planning

Reading List

Compulsory Readings

	Title
1	Dey, N., Hassanien, A. E., Bhatt, C., Ashour, A. S., & Satapathy, S. C. (Eds.). (2018). Internet of Things and big data analytics toward next-generation intelligence. Springer International Publishing.
2	Dey, N. and Tamane, S. (2018). Big Data Analytics for Smart and Connected Cities. IGI Global. DOI: 10.4018/978-1-5225-6207-8
3	Barends, E. & Rousseau, D. M. (2018). Evidence-based management: How to use evidence to make better organizational decisions. New York: Kogan-Page
4	Silva, B. N., Khan, M., & Han, K. (2018). Towards sustainable smart cities: A review of trends, architectures, components, and open challenges in smart cities. Sustainable Cities and Society 38, 697-713.

5	Angelidou, Margarita (2014). Smart City Policies: A Spatial Approach. Cities 41, S3-S11.
6	Lam, Patrick T.I, & Yang, Wenjing. (2020). Factors influencing the consideration of Public-Private Partnerships (PPP) for smart city projects: Evidence from Hong Kong. Cities 99, 102606.

Additional Readings

	Title
1	Gassmann, O., Böhm, J. and Palmié, M., 2019. Smart Cities: Introducing Digital Innovation to Cities. Emerald Group Publishing.
2	Organisation for Economic Co-operation and Development, 2018. Rethinking urban sprawl: moving towards sustainable cities. OECD Publishing.
3	Pierre, J. (1999). Models of Urban Governance: The Institutional Dimension of urban politics. Urban Affairs and Review 34(2): 372-396.
4	Campbell, S. (1996). Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. Journal of the American Planning Association 62(3): 296-312.
5	Davies, W. K. D. (1997). Sustainable Development and Urban Policy: Hijacking the Term in Calgary. GeoJournal 43(4): 359-369.
6	https://asean.org/asean/asean-smart-cities-network/