

GEOG2160 Sustainable Waste Management and Circular Economy in Hong Kong**TIMETABLE ARRANGEMENT:** Annual; 1st Semester**CREDITS:** 6**COURSE TEACHER:** Professor Elvis AU**ASSESSMENT:**

EXAMINATION 50 %	COURSEWORK 50 %
• 2-hour written examination	• One individual essay • Short presentation

OBJECTIVES:

This course provides a framework of sustainable waste management in the context of a metropolitan city like Hong Kong and, through a multi-disciplinary approach, explores the challenges and possible directions for sustainable waste management.

COURSE SYNOPSIS:

This course provides a framework of sustainable waste management in the context of a metropolitan city like Hong Kong. The interactions among economic activities, human activities and waste management problems and solutions will be covered. The waste challenges and waste management hierarchy will be examined covering waste reduction, minimization, recycling, treatment and disposal. A multi-disciplinary approach is adopted to prompt students to critically re-examine their values and lifestyles in relation to the waste management challenges facing a city like Hong Kong. An international perspective will be adopted to enable students to evaluate the effectiveness and appropriateness of different waste management policies and practices. The spatial implications of waste management policies and infrastructure will be analysed. The role of technology in waste management and treatment will be discussed. The course concludes with a critical look at values, lifestyles, policies and technologies as the key drivers of change for sustainable waste management for long term sustainability of a city like Hong Kong.

LECTURE TOPICS:

- Waste management challenges in various cities and Hong Kong
- Waste management framework and hierarchy
- Overseas waste management policies and practices
- Economic development and waste management
- Waste avoidance and reduction
- Waste reuse and recycling
- Energy recovery, waste treatment technology and waste disposal
- Spatial implications, spatial distribution and site selection of waste infrastructure
- Values, lifestyle and waste management
- Waste management and circular economy

RECOMMENDED READING LIST:

- Kaza, S., Yao, L., Bhada-Tata, P., & Van Woerden, F. (2018). *What a waste 2.0: a global snapshot of solid waste management to 2050*. World Bank Publications. <https://openknowledge.worldbank.org/bitstream/handle/10986/30317/211329ov.pdf>
- Environmental Protection Department. (1989). *Waste disposal plan for Hong Kong*. HKSAR Government. <https://digitalrepository.lib.hku.hk/catalog/1v53m0276#?c=&m=&s=&cv=&xywh=-1306%2C-96%2C3798%2C1888>
- Legislative Council of the Hong Kong Special Administrative Region. (2014). *Report on the duty visit to the United Kingdom, the Netherlands, Denmark and Sweden to study these countries' experience on thermal waste treatment facilities*. HKSAR Government
- European Union Law. (n.d.). Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and Repealing Certain Directives. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02008L0098-20180705&from=EN>
- Chang, N. B., & Pires, A. (2015). *Sustainable solid waste management: A systems engineering approach*. John Wiley & Sons.
- Verweij, M., Alexandrova, P., Jacobsen, H., Béziat, P., Branduse, D., Dege, Y., ... & Wiegmann, M. (2020). Four galore? The overlap between Mary Douglas's grid-group typology and other highly cited social science classifications. *Sociological Theory*, 38(3), 263-294.
- Environment Bureau. (2021). *Waste Blueprint for Hong Kong*. HKSAR Government. https://www.enb.gov.hk/sites/default/files/pdf/waste_blueprint_2035_eng.pdf
- Fastenrath, S., & Braun, B. (2018). Lost in transition? Directions for an economic geography of urban sustainability transitions. *Sustainability*, 10(7), 2434.
- Satoh, K., Gronow, A., & Ylä-Anttila, T. (2021). The Advocacy Coalition Index: A new approach for identifying advocacy coalitions. *Policy Studies Journal*.
- Hughes, R. (2017). The EU circular economy package—life cycle thinking to life cycle law?. *Procedia Cirp*, 61, 10-16.
- European Commission, Joint Research Centre. (2010). Making Sustainable Consumption and Production a Reality. A Guide for Business and Policy Makers on Life Cycle Thinking and Assessment. <https://ec.europa.eu/environment/pubs/pdf/sustainable.pdf>
- Schönborn, A., & Junge, R. (2021). Redefining ecological engineering in the context of circular economy and sustainable development. *Circular Economy and Sustainability*, 1(1), 375-394.
- European Commission. (2021). *Recommendation on the use of Environmental Footprint methods*. https://environment.ec.europa.eu/publications/recommendation-use-environmental-footprint-methods_en
- Additional readings about recent developments to be provided according to lecture topics

Course Learning Outcomes (CLOs) After completing this course, students would be able to:		Alignment with Programme Learning Outcomes (PLOs)*						Course Assessment Methods
		1	2	3	4	5	6	
1	Appreciation of the relevance and importance of waste management to a metropolitan city like Hong Kong	✓	✓					2 short research papers, short presentation & examination
2	Understanding of the basic concept of waste management hierarchy and key policies and practices		✓	✓				2 short research papers, short presentation & examination
3	Appreciation of sustainable waste management as an integral part of human and spatial development		✓	✓	✓			2 short research papers, short presentation & examination
4	Understanding of values and life-style as drivers of sustainable waste management				✓	✓		2 short research papers
5	Critical reading and writing skills			✓	✓			2 short research papers
6	Ability to better articulate the waste management challenges and the possible solutions having regard to various factors				✓	✓	✓	2 short research papers & examination

*Geography Major Programme Learning Outcomes (PLOs)

In order to meet the demands and challenges in this dynamic and ever-changing world, the Department has designed a series of well-structured and contemporary courses to cater to the different interests of students. Its courses are designed to align with the University's educational aims which hope to nurture future generations not only with a critical and intellectual mindset, but also with a passion to contribute to society in general.

After completing the programme, Geography Major students should be able to:

PLO1 critically analyse the geographical aspects of the relationship between people and the natural environment;

PLO2 demonstrate and develop an understanding of how these relationships have changed with space and over time;

PLO3 identify, collect and utilize primary and secondary data to investigate and analyse the issues and problems facing people, places and society;

PLO4 integrate, evaluate and communicate information from a variety of geographical and other sources;

PLO5 participate in promoting social, economic and environmental sustainability at the local, regional and global scales; and

PLO6 effectively apply a range of transferable skills in academic, professional and social settings.