

TIMETABLE ARRANGEMENT: Annual; 1st Semester

CREDITS: 6

COURSE TEACHER(S): Professor Kin-chung HO

**ASSESSMENT:**

EXAMINATION 60 %	COURSEWORK 40 %
• 2 hours	• 1 course essay • 1 field study report

**OBJECTIVES:**

The course is designed to present: 1) an introduction to hydrological resources in urbanized areas; b) an outline of water supply, including access, storage, distribution and drainage systems; 3) hydrologic hazards, particularly those relevant to climate changes; in urbanized areas and 4) water quality and water conservation issues from environmental aspect.

**COURSE SYNOPSIS:**

This course aims to provide students with appropriate knowledge in water resources and water quality with special reference to those in urbanized environment. The course also aims to develop students' analytical and management skills for applying relevant knowledge in human society particularly the Great Bay Area including Hong Kong. It starts with an introduction to the hydrological cycle and water system in global and regional perspectives. Understanding and discussion of the hydrologic cycle and water system lead to studies relevant to water supply, water quality, drainage and water conservation in urbanized environment. The geographic specialties and contrasts of water management in Hong Kong and nearby areas are analysed in detail. Hydrologic problems in human society such as flooding, drought and restriction of water supply etc. are also examined with special attention to global climate change. Last but not least, the sustainability of water including protection of water catchment, sharing of water resources between different jurisdictions, water conservation and efficiency of water consumption, water quality in taps and desalination which is one of the new water sources will be discussed with local relevance.

**LECTURE TOPICS:**

- The hydrological cycle: water in global and regional perspectives
- Introductory hydrology
- Water resources and water quality issues in China including the Great Bay Area in Guangdong
- Water supply and distribution, with particular reference to Hong Kong
- Drainage and sanitation systems in urban and rural areas
- Water quality and water pollution, from source to taps
- Water quality standards and water quality monitoring, from hydrology to ecology and health & safety
- Hydrologic hazards with special attention to the impacts of global climate change
- Total Water Management (TWM): protection and control, conservation, efficiency of water consumption, maintenance of water drains and flood drainages in urbanized areas, new water sources
- Sustainability of Hydrological Cycle: equity, innovation, planning, education and public participation

**RECOMMENDED READING LIST:**

- Musy, A. and C. Higy (2010) Hydrology: A Science of Nature. CRC Press. ISBN 978-1-578-087099
- Stephenson, D. (2003) Water Resources Management. CRC Press. ISBN 978-9-058-095732
- Boyd, A. and Claude E. (2015) Water Quality – An Introduction. Springer. ISBN 978-3-319-177446-4
- 何建宗、吳方笑薇 (2013) 水舞人間. Warrior Books. ISBN 978-988-12219-3-3

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	gain knowledge of hydrologic cycle, introductory hydrology, water resource and water quality in global, regional and local perspectives	✓	✓		✓			Course essay & exam
2	gain knowledge and awareness of issues in water supply & flood control in urbanized environment and, water hazards relevant to global climate change	✓	✓		✓			Course essay & exam
3	gain knowledge and skills in implementing water quality standards, water monitoring and water system management	✓	✓					Course essay & exam
4	gain awareness and in-depth comprehension of the problems of sustainability with particular reference to water	✓	✓		✓	✓	✓	Course essay & exam
5	describe, analysis and discuss contemporary water management issues			✓	✓	✓	✓	Course essay, field report & exam
6	discuss critically and present (in oral and/or written form) effectively to support reasoned arguments			✓	✓		✓	Course essay, field report & exam

### **\*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.