

## **GEOG3210 Trees for Green and Liveable Cities (6 credits)**

**Course Teacher: Professor C Y Jim**

### **Objectives**

The course assesses the growth and distribution of trees in the city landscape, emphasizing the interactions between trees and soil and atmospheric environment, institutional constraints to tree planting and care, and measures to improve the quantity and quality of urban greenery.

### **Course Synopsis**

This course introduces students to trees as a prominent natural-green element of the urban ecosystem. As key landscape features and ecological partners in human settlements, trees are evaluated with respect to composition, structure, biodiversity, environmental conditions for their existence, multiple benefits and functions to people and environment and general pattern of greenspaces in cities. Various stress factors dampening tree vigour in the trying urban milieu in the above- and below-ground realms and the resulting arboricultural problems are considered. The practical management of trees in the urban landscape is elaborated with reference to species composition and selection to match different site conditions, tree planting techniques and subsequent care, tree preservation and transplanting, and the assessment and valuation of urban trees. By adopting a non-technical approach, students with arts, social sciences or science background with an interest in nature-in-city are targeted.

### **Lecture Topics**

- Tree structure and function
- Subaerial environment for tree growth
- Soil and rooting constraints to tree growth
- Arboricultural disorders
- Multiple benefits of urban trees
- Tree planting and species selection
- Tree transplanting
- Tree management in urban Hong Kong

### **Fieldwork**

One field trip to learn field assessment of trees, followed by students' own small-scale tree survey to apply the acquired knowledge to real-world trees in a site to be chosen by students.

### **Assessment**

Examination (two hours) 60%; Coursework 40% (consists of a report on the field trip and tree survey).

### **Learning Outcomes**

Knowledge:

- Multiple benefits and ecosystem functions of urban greenery
- Limitations and problems of tree growth in the urban environment
- Methods and approaches to improve tree growth and protection in cities

Skills:

- Multidisciplinary outlook and integration of knowledge from a wide range of cognate fields
- Field assessment, data analysis and interpretation of urban trees
- Writing an independent and critical report on data collected in the field on urban-tree growth problems

### **Recommended Reading List**

1. Harris, R.W., Clark, J.R. & Matheny, N.P. (2004) *Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines*, 4th edition. Prentice Hall, Upper Saddle River, NJ.
2. Miller, R.W. (2015) *Urban Forestry: Planning and Managing Urban Greenspaces*, 3rd edition. Waveland Press, Long Grove, IL.