

## **GEOG2055 Water Resources and Management (6 credits)**

**Course Teacher: Dr L S Ran**

### **Objectives**

The course is designed to 1) introduce water as a resource; 2) outline the hydrologic cycle and quantification of the water balance; 3) discuss water use and supplies; 4) evaluate the human impact upon water including runoff amount and quality.

### **Course Synopsis**

This course begins with an introduction to water as a resource, and the drainage basin hydrological cycle. The second part of the course focuses upon the use of water resources, including changing demand for water, and explores possible solutions to the water problem. It also examines the issue of access to water. The human impact upon runoff and groundwater by means of dam construction and land-use change is studied. Finally, water quality including pollution and its impact upon water resources is explored.

### **Lecture Topics**

- Water as a resource including the water balance and hydrologic cycle
- Changing patterns in demand, consumption and access
- Future water supplies: Supply vs demand management
- Runoff: The impact of forest, dams and urbanisation
- Groundwater problems
- Water quality and pollution

### **Laboratory Practicals and Fieldwork**

A number of practicals and a fieldwork exercise will be part of the course.

### **Assessment**

Examination (two hours) 60%; Coursework 40% (consists of 3 exercises).

### **Learning Outcomes**

Knowledge:

- An introduction to water as a resource and the hydrologic cycle
- An awareness of water use and issues in supply and management
- An understanding of the human impact upon the resource
- Knowledge of basic hydrologic and water-quality measurements

Skills:

- Analyse and interpret hydrologic/water-quality data from a range of sources
- Develop reading and presentation skills
- An ability to think critically about water supply issues
- Conduct basic hydrologic/water-quality measurements

### **Recommended Reading List**

1. Davie, T. (2008) *Fundamentals of Hydrology*. Routledge.
2. UNESCO (2006) *Water: A Shared Responsibility. The United Nations World Water Development Report 2*.