

The Hong Kong University of Science and Technology

UG Course Syllabus

[Course Title]: **HYDROSYSTEMS ENGINEERING**

[Course Code]: CIVL 3510

[No. of Credits]: 3 Credits

[Any pre-/co-requisites]: CIVL 2510

Professor: Mengqian LU

Email: mengqian.lu@ust.hk

Course Description

This course introduces basic and fundamental knowledge essential to the design and analysis of hydrosystems engineering problems with the consideration of climate change. The course consists of two interrelated parts: hydrology and hydraulics, within the non-negligible scope of climatology. Hydrology covers various processes of water cycle (including precipitation, infiltration, rainfall-runoff modeling, and flow routings) that produce loads on hydrosystems. Hydraulics, on the other hand, uses basic principles of fluid mechanics to the analysis of natural water systems and the design of engineering structures.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Homework	10%
Mid-Term 1	20%
Mid-Term 2	20%
Final examination	50%

Recommended (**NOT required**) Texts and Materials

Marlyn L. Shelton, **Hydroclimatology: Perspectives and Applications**,

Cambridge University Press

Frank M. White, (8th edition), **Fluid Mechanics**, McGraw-Hill Education – **If you feel you need some further help to link CIVL 2510 to CIVL 3510.**

[Optional] Additional Resources

All will be provided via **CANVAS**.