




















































Hokkaido University Syllabus					
  Course Title					
Hydrogeology					
  Subtitle					
  Instructor (Institution)					
Toshifumi IGARASHI(Faculty of Engineering)					
  Other Instructors (Institution)					
Toshifumi IGARASHI(Faculty of Engineering)					
  Course Type				  Open To Other Faculties / Schools	OK
  Year	2016	  Semester	1st Semester (Summer Term)	  Course Number	092362
  Type of Class	Lecture	  Number of Credits	2	  Year of Eligible Students	~
  Eligible Department / Class				  Other Information	
  Numbering Code	ENG 5961				
  Major Category Code	  Major Category Title				
ENG	Engineering, Graduate School of Engineering				
  Level Code	  Level				
5	Specialized Subjects (basics) in graduate level (Master's Course and Professional Course), Inter-Graduate School Classes				
  Middle Category Code	  Middle Category Title				
9					
  Small Category Code	  Small Category Title				
6					
  Language Code	  Language Type				
1	Classes are in English.				

  Key Words

underground space, groundwater flow, solute migration, and environmental assessment

  Course Objectives

This course outlines transport phenomena of water and solutes in the subsurface environment. The course is composed of three issues. The first is the use of underground space. The second is the principle of groundwater flow. The last is the underground migration of solutes in the groundwater. This study helps students to understand the fundamentals of the remediation of the subsurface environments.

  Course Goals

The fundamental phenomena of groundwater flow and solute migration are considered for the remediation of the subsurface environments.

■ ■ Course Schedule

- (1) Introduction
Fundamental aspects of groundwater, soil, and rock
- (2) Use of underground space
Waste disposal, energy storage, mining, etc.
- (3) Principle of groundwater flow
Hydraulic conductivity and storativity of aquifer, and groundwater flow
- (4) Solute transport
Advection and dispersion of solute, and distribution coefficients

■ ■ Homework

Several related exercises should be solved.

■ ■ Grading System

Based on the interim and final reports or final exam, the record is determined. In addition, the results of exercises are considered.

■ ■ Textbooks

■ ■ Reading List

[Fundamentals of groundwater / S.W. Schwartz and H. Zhang : John Wiley & Sons, 2003, ISBN:0471137855](#)
[Groundwater science / C.R. Fitts : Academic Press, 2003, ISBN:9780123847058](#)
[Groundwater / R.A. Freeze and J.A. Cherry : Prentice Hall, 1979, ISBN:0133653129](#)

■ ■ Websites

■ ■ Website of Laboratory

http://trans-er.eng.hokudai.ac.jp/index_e.html

■ ■ Additional Information

■ ■ Update

2015/12/25 19:14:53