

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING
ABET COURSE SYLLABI

ICH2214 GROUNDWATER HYDROLOGY

- Credits and contact hours:** 10 UC credits/ 10 hours (3 h. Lectures and 7 h. Independent learning experiences)
- Instructor's name:** José Francisco Muñoz P.
- Course coordinator's name:** José Francisco Muñoz P.
- Textbook:** Schwartz F. W., Zhang H., 2003, Fundamentals of Ground Water. Wiley
- Course Catalog Description:** This course covers fundamentals of flow in porous media, emphasizing the behavior of soil-water systems, well hydraulics and an introduction to groundwater modelling. The course includes laboratory and computer demonstrations.
- Prerequisite Courses:** ICH1104 Fluids Mechanics
- Co-requisite Courses:** None
- Status in the Curriculum:** Required
- Course Learning Outcomes:**
1. Identify the principal phenomena and know how to handle the problems related to the flow of water in porous media.
 2. Solve groundwater problems.
 3. Determine soil and aquifer characteristics through laboratory and pump tests.
 4. Design wells and drainage systems.
- Relation of Course to ABET Criteria:**
- a. Knowledge of mathematics, science and engineering
 - b. Design and conduct experiments: analyze and interpret data
 - c. Design a system, component, or process
 - e. Identify, formulate, and solve engineering problems
 - g. Effective communication
 - k. Techniques, skills, and modern tools for engineering practice.
- Topics covered:**
1. Introduction.
 2. Soil-Water System.
 3. Darcy's law and continuity relations
 4. Groundwater and well Hydraulics
 5. Pump tests.
 6. Groundwater models.