



Course Name:

Ground-Water Contamination

Course Number: 20-672	Credit: 3
Program: Graduate	Course Type: General Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

The goal of this course is to explore the principles of groundwater hydrology, identify sources and types of contamination, and analyze the movement of pollutants in saturated and unsaturated zones. It also focuses on numerical modeling, multiphase flow, and monitoring of water and soil.

Course Content (outline):

- Chapter 1: Introduction to ground-water
- Chapter 2: Ground-water hydrology
- Chapter 3: Ground-water flow and well mechanics
- Chapter 4: Sources and types of groundwater contamination
- Chapter 5: Mass transport in saturated media
- Chapter 6: Transformation, retardation, and attenuation of solutes
- Chapter 7: Flow and mass transport in the vadose zone
- Chapter 8: Multiphase Flow
- Chapter 9: Numerical modeling of contaminant transport
- Chapter 10: Ground-water and soil monitoring

References:

- “Contaminant Hydrogeology”, C.W. Fetter, 1993.
- “Groundwater Contamination,” P.B. Bedient et al., 1999.
- “Quantitative Hydrogeology”, G. de Marsily, 1986.
- “Applied Hydrogeology”, C.W. Fetter, 1988.