



Course Name:

Applied Ground-Water Flow Modelling

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

Course Description (Objectives):

The course focuses on modeling groundwater flow and contaminant transport using numerical methods, emphasizing calibration and uncertainty management.

Course Content (outline):

- Chapter 1: Introduction
- Chapter 2: Governing Equations
- Chapter 3: The Finite Difference Method
- Chapter 4: The Finite Element Method
- Chapter 5: Solution of the Transport Equation
- Chapter 6: Model Applications
- Chapter 7: Model Calibration and Sensitivity Analysis
- Chapter 8: Dealing with uncertainty
- Chapter 9: Case Studies

References:

- “Applied Groundwater Modeling: Simulation of Flow and Advective Transport,” M. Anderson et al., 2nd Ed., 2015.
- “Groundwater Contamination,” P.B. Bedient et al., 1999.
- “Applied Hydrogeology,” C.W. Fetter, 1988.
- “Contaminant Hydrogeology,” C.W. Fetter, 1993.
- “Modeling Groundwater Flow and Contaminant Transport,” J. Bear & H. D. Ch. Alexander, 2010.
- “Groundwater hydrology,” D.K. Todd, 1980.