

## **SUBSURFACE POLLUTANT FATE AND TRANSPORT**

3-0-0-0-5

Groundwater as a resource; general problems of chemical contamination in groundwater; Organic and inorganic contaminants; mass balance and concept of control volume; physical transport of chemicals- the advective-dispersive-reaction equation; Nature of subsurface environment; saturated and unsaturated zones; physics of groundwater movement through these zones; modeling flow through a packed soil column; flow in the unsaturated zone; Understanding fate of contaminants; review of basic environmental chemistry; retardation; redox processes in the subsurface; Groundwater flow and quality modeling