# Lectures

1. Welcome/introductions [langevin]
2. Variable-density groundwater modeling: Applications and tools [langevin]
3. Fluid properties [hughes]
4. Concepts and equations of variable-density groundwater flow [langevin]
5. Concepts and equations of solute and heat transport [dausman]
6. MODFLOW [hughes]
7. MT3DMS—Solution schemes [langevin]
8. MT3DMS—Packages [hughes]
9. SEAWAT Concepts [langevin]
10. Variable-Density Flow (VDF) Process in SEAWAT [langevin]
11. Instructions for Using SEAWAT [dausman]
12. Evaluating output from SEAWAT [dausman]

# Exercise Introductions

1. Overview of the Henry Problem [langevin]
2. Overview of the Saltwater Intrusion (SWI) Exercise [dausman]

# Case Studies and Benchmark Problems

1. Effect of aquifer heterogeneity on Aquifer Storage and Recovery [langevin]
2. Submarine groundwater discharge [langevin]
3. Deep well injection [dausman]
4. Turkey Point [hughes]
5. Henry and Hilleke Physical and Numerical Laboratory Experiment [dausman]
6. Benchmark problems [dausman]
7. Null space monte carlo analysis using the Henry Problem [hughes]
8. Effect of numerical dispersion on predictions with a saltwater intrusion model [ hughes]
9. Tidal fluctuations and transient dispersion [dausman]
10. Parameterization of an initial concentration field [dausman]
11. Double diffusive finger convection [hughes]
12. SUTRA [hughes]