Description

- The class will meet for 2 ½ days, January 9-11, 2019, in Annapolis MD.
- Students are expected to bring a Windows laptop computer.
- Course materials will be available for download prior to class meeting:
 - ICM manual
 - Lecture notes
 - 30-box model set-up
 - 4,000-cell Chesapeake Bay model set-up

The class will cover:

- Fundamental ICM concepts including model set-up and linkage to hydrodynamic model
- Structure of model code
- Review of model kinetics
- Format of input and output files
- Pre- and post-processing of input and output files
- Execution and interpretation of model runs

Daily Schedule

- Morning session I 08:00-10:00
- Break 10:00-10:15
- Morning session II 10:15-12:00
- Lunch 12:00-12:45 (To be ordered in at student expense, Day 1 and 2 only)
- Afternoon session I 12:45-14:45 (Afternoon sessions Day 1 and 2 only)
- Break 14:45-15:00
- Afternoon session II 15:00-16:30

Day 1, Morning Session I

- Conservation of mass equation
 - Discretization
 - Solution schemes
 - Model code
- Map file
 - Concept and code

Day 1, Morning Session II

- Boundary conditions
 - Conceptualization
 - Review input file
 - Run preprocessor, create file
- Hydrodynamic file
 - Model code
 - Conservation of volume
 - Grid formats (Z-grid, sigma grid, unstructured grid)

Day 1, Afternoon Session I

- Kinetics review
 - State variables
 - Nutrient, carbon, and oxygen cycles
 - Input files and formats

Day 1, Afternoon Session II

- Sediment diagenesis model (guest lecturer)
 - Model conceptualization
 - Linkage to ICM model of water column
 - File formats

Day 2, Morning Session I

- Load files
 - \$1, \$2, \$3 files
 - Atmospheric and other loads
 - File formats
 - Linkage to Watershed Model
 - Example processor

Day 2, Morning Session II

- Other model features
 - Filter feeders (concept, file format and preparation)
 - Submerged aquatic vegetation
 - Wetlands module
 - Sediment transport

Day 2, Afternoon Session I

Other model features (cont'd)

Afternoon Session II

 Execution of 50,000-cell Bay model on the cloud (guest lecturer)

Day 3, Morning Session I

- Introduction to 4,000-cell Bay model
- Output files
 - ASCII outputs
 - The PLT file
 - The APL file

Day 3, Morning Session II

- Execute 4,000-cell model
 - Post-process outputs
 - Visualize outputs
 - Execute scenarios