Main Conference Room

Environmental Laboratory

U.S. Army Engineer Research and Development Center (ERDC)

Vicksburg, MS

**Coordinator:**

Todd Steissberg

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**Instructors:**

Barry Bunch, ERDC-EL

Zhonglong Zhang, Portland State University

Todd Steissberg, ERDC-EL

Isaac Mudge, USACE New Orleans District / ERDC-EL

Billy Johnson, LimnoTech

Lauren Melendez, ERDC-EL

Day 1: August 16th, 0830 – 1630

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| **Activity** | **Times** |
| 1. Introduction (course overview, student, and introductions) | 0830 - 0900 |
| 1. Water Quality Modeling Fundamentals    1. Lecture 1.1: Hydrodynamics modeling    2. Lecture 1.2: Temperature modeling    3. Lecture 1.3: Water quality constituent modeling | 0900 - 1015 |
| BREAK | 15min |
| 1. Overview of CE-QUAL-W2 Version 4.5    1. Lecture 1.4: General overview and new features in Version 4.5 | 1030 – 1115 |
| BREAK | 15min |
| 1. CE-QUAL-W2 Model Input Requirements    1. Lecture 1.5: CE-QUAL-W2 control file and input data overview | 1130 - 1200 |
| LUNCH | 1200 - 1330 |
| * 1. Workshop 1.1: CE-QUAL-W2 bathymetry | 1330 - 1430 |
| BREAK | 15min |
| * 1. Lecture 1.6: Model setup and input data | 1445 - 1515 |
| BREAK | 15min |
| * 1. Workshop 1.2: Model setup and input data | 1530 - 1630 |

Day 2: August 17th, 0830 - 1630

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| **Activity** | **Times** |
| 1. CE-QUAL-W2 Model Demos    1. Case Study 2.1: Water temperature    2. Case Study 2.2: Dissolved oxygen | 0830 - 0930 |
| BREAK | 15min |
| * 1. Case Study 2.3: Total Dissolved Gas (TDG)  1. CE-QUAL-W2 Model Setup    1. Case Study 2.4: Model Setup I | 0945 - 1045 |
| BREAK | 15min |
| * 1. Case Study 2.5: Model Setup II | 1100 – 1200 |
| LUNCH | 1200 - 1330 |
| 1. CE-QUAL-W2 Utilities    1. Lecture 2.1: Model utilities    2. Workshop 2.1: Model utilities | 1330 - 1445 |
| BREAK | 15min |
| 1. CE-QUAL-W2 Calibration and Validation    1. Lecture 2.2: Calibration and validation fundamentals    2. Workshop 2.2: Calibration and validation | 1445 – 1630 |
| 1. Cook-out at Billy and Lora Johnson’s house | 18:00 – 20:00 |

Day 3: August 18th, 0830 – 1630

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| **Activity** | **Times** |
| 1. ERDC Tour: fish flume (CEERF), sediment lab, etc. | 0830 - 1000 |
| BREAK | 15min |
| 1. Workshops and Demos    1. Workshop 3.1: Add a port to a dam | 1015 – 1115 |
| BREAK | 15min |
| * 1. Workshop 3.2: Selective withdrawal | 1130 - 1230 |
| LUNCH | 1230 – 1400 |
| * 1. Workshop 3.3: Upgrading a CE-QUAL-W2 model to Version 4.5 | 1400 - 1500 |
| BREAK | 15min |
| * 1. Workshop 3.4: Special topics and student demos      + Students are invited to submit topics of interest for demonstration and discussion | 1500 - 1600 |
| 1. Summary and Discussion | 1600 - 1630 |