Water Quality Instrumentation: Operation, Calibration, and Maintenance

Course Code: USGS-W-16-322

Hydrologic Instrumentation Facility
(HIF) Stennis Space Center, MS
1-800-382-0634

December 4-7, 2017

Agenda

Monday

8:00 Welcome/Introductions

8:45 Water Temperature (WT)

9:15 Conductivity – Specific Conductance (SC)

9:45-10:00 Break

10:00 pH

10:30 Dissolved Oxygen (DO)

11:00 Turbidity (TBY)

12:00 – 1:00 LUNCH (on your own)

1:00-4:30 Sonde/Probe Calibration, Maintenance & Issues
short PP (15-20 minutes) overview, lab partners will be given sondes, probes, and calibration supplies

Sonde interface and communication check **(Student Group #1 in QW Lab)**
Proper probe removal and installation
Proper sonde/probe cleaning and common problems
Troubleshooting hints
Probe calibration and verification
Recording of calibration information on field form
Setting up internal logging
Each team will prepare field kits for deployment

1:00-4:30 Interfacing Sondes with Data Collection Platforms
Timing issues for internal versus external logging
Cabling
Connections to the DCP **(Student Group #2 in Classroom)**
Programming the DCP

Checking the Sonde for proper operation
Logging data in the DCP
Data retrieval and review

4:30 Dismissed

Tuesday

8:00-11:30 Sonde/Probe Calibration, Maintenance & Issues
short PP (15-20 minutes) overview, lab partners will be given sondes, probes, and calibration supplies

Sonde interface and communication check **(Student Group #2 in QW Lab)**
Proper probe removal and installation
Proper sonde/probe cleaning and common problems
Troubleshooting hints
Probe calibration and verification
Recording of calibration information on field form
Setting up internal logging
Each team will prepare field kits for deployment

8:00 Interfacing Sondes with Data Collection Platforms
-11:30 Sonde setup for internal logging
Timing issues for internal versus external logging
Cabling
Connections to the DCP **(Student Group #1 in Classroom)**
Programming the DCP
Checking the Sonde for proper operation
Logging data in the DCP
Data retrieval and review

11:30-12:30 LUNCH
"Weather Option: Do Wednesday Morning here"

12:30-1:30 Review of SV Mobile

1:30-1:45 Break

2:00-3:00 Tour of HIF

3:00-4:30 Tour of HIF Hydraulics Lab

4:30-5:00 Discussion of Field Deployment at Pearl River Site

5:00 Dismissed

Wednesday

8:00 Travel to Pearl River test facility

8:15 Installation and Setup of QW Sondes and DCPs in Pearl River

Field Calibration Check
Calibration verification check against reference sonde
Recording verification Data (Paper Forms)
Installing QW Probes and Wiring to DCPs
Programming the DCP
Checking for Proper Operation

11:30 LUNCH (pizza at pavilion) weather permitting

12:30 Recap of Installation Session; Questions and Answers

Student Group #1

1:00 – 3:00 Hands-on time with new WQ equipment (Student Group #1 in LAB)

Groups will complete assignments at various stations
(Aquatroll 600, Manta+, EXO3, HL4, HL7, nitratax, solitax)

Student Group #2

1:00-2:00 Site Selection for WQ Sondes

Classroom Discussion of installation issues **(Student Group #2 in Classroom)**
Slideshow of various installations/deployments
Lessons learned

2:00-3:00 Telemetry Topics

3:00 – 3:15 Break

Student Group #2

3:15-5:00 Hands-on time with new WQ equipment

Groups will complete assignments at various **(Student Group #2 in LAB)**
Stations (Aquatroll 600, Manta+, EXO3, HL4, HL7, nitratax, solitax)

Student Group #1

3:15-4:00 Site Selection for WQ Sondes (Student Group #1 in Classroom)

Classroom Discussion of Installation Issues

Slideshow of Various Installations/Deployments
Lessons learned

4:00 – 5:00 Telemetry Topics

5:00 Dismiss

Thursday

8:00 Discuss Plans for Servicing Visit at Pearl River (classroom)

8:15 Travel to Pearl River Test Facility

8:30 – 11:00 Field Servicing and Data Retrieval Practices (in field)
Full Sonde Inspection and "servicing"
Recording Site visit Information on field sheet
Downloading Data (Internal and DCP)
Performing calibration verification for drift and fouling correction

11:00 -11:30 Return field kits/Break

11:30 – 12:30 LUNCH

12:30-1:30 Data Post-Processing from field site
Failure and Fouling Issues
Watching for Trends in Data
Good QW Records versus Erroneous Data

1:30-1:45 Break

2:00 – 3:00 HIF Topics/One-stop

3:00-3:30 Question/Answer Session
Suggestions for improvements to class
Class evaluation

3:30-4:00 Box up materials for sending home

4:00 Dismissed