

COURSE: SAMPLING AND PRESERVATION OF WATER AND SEDIMENT SAMPLES

DATE OF THE COURSE (on-line module – 10h/ training): from March 9th to 21th, 2020

DATE OF COURSE (face-to-face module – 40h/training): **from September 14th to 18th, 2020**

(New date)

VENUE OF THE COURSE:

CETESB – Companhia Ambiental do Estado de São Paulo

Av. Prof. Frederico Hermann Jr., 345

CEP 05459-900 – Alto de Pinheiros - São Paulo, Brasil

REGISTRATION: from January 13th to 31th, 2020, through the registration form that will be available in the Training Website of the National Water Agency - ANA (<https://capacitacao.ead.unesp.br>)

NUMBER OF QUOTAS: 30

PUBLICATION OF THE LIST OF SELECTED CANDIDATES: February 5th, 2020.

ORGANIZING INSTITUTIONS:

ANA – National Water Agency (Brazil)

CETESB – Environmental Company of the State of São Paulo

UNESCO – United Nations Educational, Scientific and Cultural Organization

ABC/MRE – Brazilian Cooperation Agency/Foreign Affairs Ministry

COLLABORATING INSTITUTIONS:

ACTO – Amazon Cooperation Treaty Organization

COURSE'S COORDINATORS:

Technical Coordinators: Carlos Jesus Brandão (cbrandao@sp.gov.br); Venicio Pedro Ribeiro (vpribeiro@sp.gov.br)

SCOPE

To train participants to properly apply techniques for collecting and preserving water, aquatic organisms and sediment samples for physical-chemical and biological analysis. To provide training to participants so they can contribute to the planning of water quality and sediment monitoring networks.

LANGUAGE

The course will be conducted in **Portuguese** with simultaneous translation into **Spanish** and **English**.



TARGET AUDIENCE:

The course is aimed at technicians and professionals from water and environment management agencies, Latin American countries and Portuguese-speaking countries, directly involved in the implementation of field activities, and involved in the planning of monitoring networks.

PREREQUISITE: A previous water sampling experience is highly recommended.

METHODOLOGY

The course will be developed with a class load of 50h/class, distributed in 10 hours of online course and 40 hours face-to-face (including, on September 18th, a field trip to the Guarapiranga Reservoir).

ONLINE MODE

On-line studies by means of material (study guide) that will be sent by e-mail to all candidates, including five videos prepared for the National Guide of Sampling and Preservation of Samples.

FACE-TO-FACE MODE

Theoretical and laboratory classes for learning with equipment and material handling, field visits for sampling and equipment operation (automatic meters, multi-parametric probes, portable devices).

ON-LINE MODULE PROGRAM (10h/training):

Introduction of Water Quality

- Types of aquatic environments and their main characteristics (on-line content).
- Compartments of the aquatic environment (water, aquatic communities, sediments)
- Natural events that alter water quality.
- Main water pollution sources of and its impacts (eutrophication, oxygen depletion, toxicity, microbial contamination).
- Spatial and temporal variations in water quality; Main parameters of water quality; Emerging contaminants.

Variables of Water Quality and Objectives of the Water Quality Assessment

- Physical and chemical standards of water quality.
- Hydrobiological and microbiological standards of water quality.
- Types of assessments: emergencies, control activities, trend analysis, impact assessment, analysis of conformity to legal standards.

PROGRAM OF FACE-TO-FACE MODULE (40h/training):

DATE	TIME	CONTENT	PROFESSORS
09/14/20	8:00 am – 8:30 am	Registration of the participants	PDGC and ELC TEAM
	8:30 am – 8:45 am	Opening of the Course	ELC and PDGC team
	8:45 am – 12:45 pm	Introduction to the course and Introduction to Water Quality	Biol. PhD Claudio Roberto Palombo
		Physical and Chemical Variables Standards of Water Quality	Chem. Beatriz Durazzo Ruiz
	12:45 pm – 1:45 pm	Lunch	
	1:45 pm – 3:45 pm	Monitoring Networks and Geographic Characterization	Geogr. PhD Carmen Lucia V. Midaglia
3:45 pm – 5:45 pm	Water Quality Network Planning	Eng. PhD Maurrem Vieira - Water Resources Specialist (ANA)	
09/15/20	8:00 am – 12:00 pm	Physico-chemical parameters Health significance and control parameters	Chem. PhD Gilson Alves Quináglia
	12:00 pm – 1:00 pm	Lunch	
	1:00 pm – 3:00 pm	Microbiological parameters Microbiological indicators, sanitary significance and control parameters	Biol. Mikaela R. F. Barbosa
	3:00 pm – 5:00 pm	Hydrobiological parameters Sanitary significance and control parameters	Biol. PhD Marta Condé Lamparelli

DATE	TIME	CONTENT	PROFESSORS
09/16/20	8:00 am – 12:00 pm	Introduction: planning and selection of sampling sites.	Biol. Carlos Jesus Brandão
		Survey of field information and needed resources	
		Definition of the sampling site	
		Organization and execution of field works	
		Support infrastructure, required in field materials, and equipment.	
		More used sample preservation techniques	
		Safety in field work	
		Preparation of sampling vessels	
	Methodologies for routine sampling in water treatment plants, distribution networks, and phreatic wells		
12:00 pm – 1:00 pm	Lunch		
1:00 pm – 3:00 pm	Methodologies for routine sampling in surface waters (rivers, dams) marine environments and estuaries Aquatic biota and sediments Presentation of situations involving sampling with diverse kinds of sampling	Biol. Carlos Jesus Brandão	
3:00 pm – 5:00 pm	Sampling quality control	Env. Tech. Renan L. de O. Silva	
09/17/20	8:00 am – 12:00 pm	Practical Class - Internal part - ELC - Sampling Division	Env Tech. Claudio Santos Sorc
		Calibration and use of field equipment	Env. Tech. Renan L. de O. Silva
		Sampling equipment, vessels preparation, reagents and instruments for practical classes in the field (Guarapiranga Reservoir)	Env. Tech. Venicio Pedro Ribeiro Biol. Carlos Jesus Brandão
	12:00 pm – 1:00 pm	Lunch	
1:00 pm – 5:00 pm	Practical Class - Internal part - ELC - Sampling Division - Calibration and use of field equipment Sampling equipment, vessels preparation, reagents and measuring instruments for practical classes in the field (Guarapiranga Reservoir)	Env. Tech. Amb. Claudio Santos Sorc Env. Tech Renan L. de O. Silva Env. Tech Venicio Pedro Ribeiro Biol. Carlos Jesus Brandão	



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DATE	TIME	CONTENT	PROFESSORS
09/18/20	8:00 am – 5:00 pm	Practical class (external): - Guarapiranga Reservoir (Yacht Club Paulista); - Sampling and preservation of water samples, aquatic biota and sediment in dam. Evaluation and closure PDGC - Courses and Capacity Building Sector ELC - Sampling Division	Env. Tech. Claudio Santos Sorc Env. Tech Renan L. de O. Silva Env. Tech Venicio Pedro Ribeiro Biol. Carlos Jesus Brandão ELC/PDGC Team

REGISTRATION AND LOGISTIC ASPECTS:

- Registration dates are from January 13th to 31th, 2020, by filling up the registration form available in the Training Website of the ANA Agency (<https://capacitacao.ead.unesp.br>)

- All participation costs of the selected candidates will be covered by the organizing institutions, **including:**

- ✓ Course's Costs;
- ✓ Transfer from São Paulo Airport (Guarulhos or Congonhas) to lodging place (hotel) and vice-versa;
- ✓ Lodging (extra costs, such as phone calls, minibar, etc., are, however, not covered by the organizing institutions and are, therefore, the sole responsibility of each participant);
- ✓ Meals:
 - Breakfast at the hotel;
 - Lunch at a restaurant near to the course venue;
 - Dinner at the hotel (including dinner on Sunday, September 13th, 2020);
 - *Coffee-breaks* (one in the morning and a second one in the afternoon);
- ✓ If necessary, transfer between the hotel and CETESB and vice versa.

The costs are **NOT** covered:

- ✗ Traveling costs from city of origin to São Paulo (SP) and back;
- ✗ Transfer from your city of origin to the airport / bus station / train station and vice versa;
- ✗ Extra expenses such as taxi, phone calls, minibar, etc.

- There will be simultaneous translation of face-to-face classes into Spanish and English.

- The temperature in São Paulo can vary greatly during the day. Therefore, we recommend that you bring warm clothes.

- The use of specific clothing for field class (sweaters, shorts, sunscreen, hat or cap, etc.) at Guarapiranga reservoir is recommended. The class is scheduled for September 18th, 2020.

