

COURSE : WATER QUALITY MONITORING AND ASSESSMENT

DATE OF COURSE (on-line module – 10h/training): from August the 5th to August the 31st, 2019

DATE OF COURSE (face-to-face module – 42h/training): from September the 9th to September the 13th, 2019

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 May the 6th to May the 26th, 2019 through the registration form that will be available in the Training Website of the National Water Agency -ANA (for its acronym in Portuguese) (<https://capacitacao.ead.unesp.br>)

NUMBER OF QUOTAS: 30

PUBLICATION OF THE LIST OF SELECTED CANDIDATES: May the 30th, 2019 **(the date was changed to June the 4th, 2019).**

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

PARTNERS:

ACTO – Amazon Cooperation Treaty Organization

COURSE COORDINATORS:

Technical Coordinators: Carmen Lucia V. Midaglia (cmidaglia@sp.gov.br) and Claudio R. Palombo (cpalombo@sp.gov.br)

SCOPE

To enable participants to properly apply techniques for collecting and preserving water samples, aquatic organisms and sediments for physical-chemical and biological analyzes.



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, responsible for data analysis and report preparation on water quality, aquatic communities, and sediments.

PREREQUISITE: Preferably, have basic statistics knowledge. quar

METHODOLOGY

The course will be developed with a class load of 52h/ class, distributed in 10 hours of distance learning and 42 hours face-to-face (including on September the 13th, a field trip to the Guarapiranga reservoir).

ONLINE COURSE

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

FACE-TO-FACE COURSE

Theoretical classes and case studies on the elaboration process of a water quality report.

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 variables patterns of water quality.

- Types of assessments: environmental emergencies, control activities, analysis of trends, impact assessment, analysis of conformity to legal standards.



PROGRAM OF THE FACE-TO-FACE MODULE (42h/training):

DATE	TIME	CONTENT	PROFESSORS
09/09/19	8h00 am – 9h am	Registration of the participants / Opening of the Course	ETGC Team Biol. PhD Claudio Roberto Palombo Geogr. PhD Carmen Lucia V. Midaglia
	9h am – 12h15 pm	Introduction to Water Quality	Biol. PhD. Claudio Roberto Palombo
	12h15 pm – 1h45 pm	Lunch	
	1h45 pm – 3h45 pm	Physical and chemical variables patterns of water quality	Eng. Msc. Gabriela de Sá Leitão de Mello
	3h45 pm – 5h45 pm	Spatial and temporal variations in water quality	Bio. PhD Fabio Netto Moreno
09/10/19	8h00 am – 10h00 am	Data storage and exchange - Structuring and storage of water quality data. Exchange of data	Geogr. PhD Carmen Lucia V. Midaglia
	10h00 am – 12h00 pm	National Criteria: Resolutions CONAMA, Resolution of the Ministry of Health. Data processing and analysis.	Eng. MSc. Nelson Menegon Jr.
	12h00 pm – 1h30 pm	Lunch	
	1h30 pm - 3h30 pm	National and International water quality standards, water communities and sediments - water quality patterns / Biological Communities. Data processing and analysis	Biol. PhD Marta C. Lamparelli
	3h30 pm - 6h00 pm	National and International water quality standards, water communities and sediments - water quality patterns / Microbiological standards. Data processing and analysis	Biom. PhD Maria Ines Zanoli

DATE	TIME	CONTENT	PROFESSORS
09/11/19	8h00 am – 10h00 am	Data processing and analysis - Results of the Water Analysis, Consistency and Basic Statistics. Exercises	Eng. MSc. Nelson Menegon Chem. Beatriz Durazzo Ruiz
	10h00 am – 12h00 pm	Data processing and analysis - Use of water quality index calculation worksheets: Water Quality Index (WQI), Trophic State Index (TSI), Sustainable Development Goal (SDG) indicator 6.3.2.	Chem. Beatriz Durazzo Ruiz Eng. MSc. Gabriela Leitão
	12h00 pm – 1h30 pm	Lunch	
	1h30 pm – 4h00 pm	Mapping and dissemination of spatial information - Mapping and Dissemination of spatial information for Water Quality	Geogr. MSc. Vinicius Travalini
	4h00 pm – 6h00 pm	Development of maps and dissemination of spatial information - Use of Geographic Information System for Analysis and Dissemination of Spatial Information for Water Quality	Geogr. MSc. Rodrigo Ferreira da Silva
09/12/19	8h00 am – 10h00 am	Data processing and analysis of data - Management of Sediment Quality. National and International Sediment Quality Assessment Criteria.	Chem. PhD. Jose Eduardo Bevilacqua
	10h00 am – 11h00 am	Data storage– Water Quality Database Structure. Data sharing	Geogr. PhD Carmen Lucia V. Midaglia Chem. Beatriz Durazzo Ruiz
	11h00 am – 12h30 pm	Elaboration of Report and dissemination of information - Preparation of Water Quality Bulletins	Chem. Vinicius Marques da Silva Chem. Beatriz Durazzo Ruiz
	12h30 pm – 2h00 pm	Lunch	
	2h00 pm – 3h30 pm	Analysis of the elaboration process and the content of the Surface Water Quality Report in the State of São Paulo	Biol. Msc. Denise Amazonas Pires Biol. PhD Hélio Rubens V. Imbimbo
	3h30 pm – 6h00 pm	Data processing and analysis of the data - Analysis of aquatic communities: Phytoplankton, benthic macroinvertebrates and ichthyofauna	Biol. Msc. Denise Amazonas Pires Biol. PhD Hélio Rubens V. Imbimbo

DATE	TIME	CONTENT	PROFESSORS
09/13/19	8:00 am – 5:00 pm	Technical visit to Guarapiranga Reservoir Equipment presentation Monitoring with water probes/ Automatic Water Network Station Geographic Characterization of Sampling Points (Water/Sediments/Bathing monitoring) Technical visit in a boat to sampling points CETESB/ANA Sampling demonstration of water and sediments	Env. Tech. Elimar de Jesus Melo Env. Tech. Venicio Pedro Ribeiro; Chem. Vinicius Marques da Silva Biol. MSc. Renato Pizzi Rossetti; Geogr. PhD Carmen Lucia V. Midaglia Chem. Beatriz Durazzo Ruz Env. Tech. Renan Lourenço Oliveira Silva

REGISTRATION AND LOGISTIC ASPECTS:

- Registration dates from May the 6th to May the 26th, 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;
- ✓ Meals:
 - Breakfast at the hotel;
 - lunch at a restaurant near to the course;
 - dinner at the hotel (including dinner on Sunday, September the 8th, 2019);
 - *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:

- ✗ Extra expenses such as taxi, phone calls, minibar, etc.;
- ✗ In the case of Brazilian participants, traveling from city of origin to São Paulo (SP) and back; and
- ✗ For candidates of all nationalities, including Brazilians, the transfer of their city of origin to the airport / bus station / train station and vice versa.

- **The weather conditions in São Paulo can change suddenly. Please bring warm clothes.**

- **The use of specific clothing for field class (sweaters, shorts, etc.), sunscreen, hat or cap for the practical class, on September the 13th, at Guarapiranga Reservoir is recommended.**

