FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING

SUBJECT: CHEMISTRY II AND LABORATORY

CODE: ----------

SEMESTER: SECOND

HOURS WEEKLY: 6

THEORETICAL: 4

PRACTICES: 2

REQUIREMENTS: CHEMISTRY I -

CALCULATION I -

BASIC MATHEMATICS

GOALS.

That the student is able to establish and correlate concepts and laws

basic principles of organic chemistry and how to use them in relation to water

That the student is able to apply sampling techniques and be able to decide

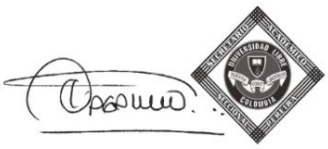
on the parameters that should be used for each particular type of water

That the student can correctly use the materials, equipment and reagents laboratory and interpret and handle the analytical techniques used in water analysis

That the student is able to interpret the results obtained in the analysis of water and evaluate its quality based on current legislation in Colombia and Venezuela

METHODOLOGY.

The course will be developed with master lectures by the professor on the content basic knowledge of the subject; for their part, students will strengthen their knowledge of the subject through recommended readings, consultations with the teacher and the development of application problems. For laboratory practices, the professor will illustrate briefly the content and purpose of the same and its relationship with the topic seen; The students will then proceed to carry out the practice and their respective report.



WORK PROGRAM.

ÿ Basic concepts of Organic Chemistry: Structural Theory; Characteristics of the Molecules; Reactivity in Organic Chemistry

- Hydrocarbons

ÿ Unsaturated compounds: Alkenes and Alkynes

ÿ Aromatic Hydrocarbons

ÿ Halogenated Derivatives of Hydrocarbons

ÿ Alcohols, Phenols and Ethers

- Carbon Compounds

- Acids and their derivatives

ÿ Nitrogen compounds

ÿ Compounds of biological interest

ÿ Dissolved oxygen and organic matter content tests: BOD, COD, TOC, DTO, DTeO

ÿ Implementation of a characterization and sampling program

ÿ Water quality for irrigation

- Basic concepts of biochemistry

ÿ General biochemical pathways for aerobic and anaerobic fermentation

LITERATURE.

APOSTLE THOMAS, Calculus, Editorial Reverté

LARSON HOSTETLER, Calculus and Analytic Geometry, McGraw-Hill Publishing

AYRES, MENDELSON Differential and Integral Calculus Schaum Series, McGraw Hill

MARSDEN, Vector Calculus; Addison-Wesley Publishing