



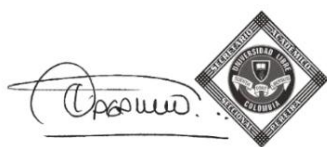
UNIVERSIDAD LIBRE®

Personería Jurídica No. 192 de 1946 de Mingobierno
Nit.: 860.013.798-5



FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING



SUBJECT: TREATMENT PLANTS II

CODE: -----

SEMESTER: NINTH

HOURS WEEKLY: 6

THEORETICAL: 4

PRACTICES: 2

**REQUIREMENTS: HYDRAULICS II,
ANALYSIS OF UNIT PROCESSES II**

GOALS.

Provide the student with the conceptual elements that allow him to integrate the knowledge acquired in chemistry, hydraulics and process analysis unitary in the design and evaluation of the operation of a plant water purification.

METHODOLOGY.



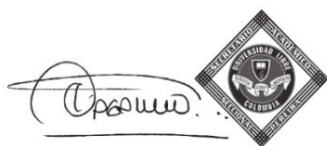


UNIVERSIDAD LIBRE®

Personería Jurídica No. 192 de 1946 de Mingobierno
Nit.: 860.013.798-5



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 professor, visits to the existing treatment plants and by developing a design that will advance over the course of the semester.



WORK PROGRAM.

- Design Overview. Summary of Rapid Mix-Capacity Design.
- Rapid mixing calculations. Hydraulic flocculator design summary.

Rapid mixing channels-flocculators.
- Flocculation calculations. Sedimentation tank design summary. Conduction

flocculators-sedimentators.
- Sedimentation calculations.
- Filtration design summary.





UNIVERSIDAD LIBRE®

Personería Jurídica No. 192 de 1946 de Mingobierno
Nit.: 860.013.798-5



- Joint sedimentation-filtration sizing.
- Filtration calculations.
- Specification of chemical dosing equipment.



LITERATURE.

CEPIS 13 Theory, Design and Control of Water Clarification Processes.

ACODAL International Seminar on Simplified Technology for

Water Purification. Proceedings. ACODAL, Valle del Cauca Branch, August 17

as of 21st 1987.

SANKS ROBERT L., Water Treatment Plant Design for the Practicing Engineer.

CETESB. Water Supply and Treatment Technique. Volume II, Faculty

of Public Health, University of Sao Paulo.





UNIVERSIDAD LIBRE®

Personería Jurídica No. 192 de 1946 de Mingobierno
Nit.: 860.013.798-5



HUDSON, HE Jr., Water Clarification Processes. Ed Van-Nostrand, New York, 1981

FAIR GM, GEYER JC, OKUN DA, Sanitary and Wastewater Engineering.

KING HW, BRATER EE, Hydraulics Manual. UTHEA

SOTELO AVILA, General Hydraulics, Volume 1.

VEN TE CHOW, Open Channel Hydraulics. McGraw Hill

