



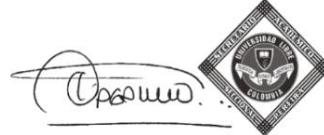
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FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING



SUBJECT: MICROBIOLOGY AND LABORATORY

CODE: -----

SEMESTER: ROOM

HOURS **WEEKLY: 4**

THEORETICAL: 2

PRACTICES: 2

REQUIREMENTS: STATISTICS II,

CHEMISTRY III AND LABORATORY,

ECOLOGY

GOALS.

That the student is able to:

- Establish and recognize the morphological, physiological and genetic characteristics that allow to differentiate microorganisms
- Identify the main metabolic activities carried out by microorganisms as well such as the optimal physical-chemical conditions for its development or control





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- Quantify, evaluate and control the variables involved in microbiological systems for use in environmental engineering
- Interpret the results obtained in microbiological analyses

METHODOLOGY.

The course will be developed with master lectures by the professor on the content basics of the subject; for their part, students will strengthen their knowledge of the subject through recommended readings, consultations with the teacher and problem solving of application.



WORK PROGRAM.

- ÿ Characterization, classification and identification of microorganisms: Examination microscopic of microorganisms
- ÿ Microbial physiology and genetics
- ÿ Microorganisms: Bacteria, fungi, algae, protozoa, viruses.
- ÿ Control of microorganisms
- ÿ Environmental microbiology
- ÿ Microorganisms and water-related diseases
- ÿ Microorganisms and water-related diseases





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LITERATURE.

PELCZAR MJ, Jr., REID RD, CHAN ECS, Microbiology, McGraw-Hill

PEBERDY JF, Development Microbiology. Blackie. glasgow

SOUNIS E., Practical Course in Microbiology. McGraw-Hill Book Company, São Paulo

BAILEY J., OLLIS DF, Biochemicals Engineering Fundamentals, McGraw-Hill Book Company, New York

GAUDY, AF, GAUDY ET, Microbiology for Environmental Scientists and Engineers, McGraw-Hill Book Company, New York

GUNEA J., SANCHO J., PARES R., Microbiological analysis of water: Applied aspects, Omega Editions, Barcelona



 **CAMINANDO EN LA EXCELENCIA**

