



UNIVERSIDAD LIBRE®

Personería Jurídica No. 192 de 1946 de Mingobierno
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FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING



SUBJECT: RESEARCH METHODOLOGY

CODE: -----

SEMESTER: FIRST

HOURS **WEEKLY:** 4

THEORETICAL: 2

PRACTICES: 2

GOALS:

To train students to prepare and present research papers with the full of requirements demanded by the University and by ICONTEC regulations.

Develop methodologies and a spirit of research among students so that apply in the development of their university studies.





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METHODOLOGY:

Master classes by the professor, practical research work, assignments in groups, specialized consultations and discussion panels.

CONTENT:

UNIT 1: EPISTEMOLOGICAL FOUNDATIONS

- The method of scientific research
- ÿ Applied sciences: Fundamental problems
- ÿ Theory about the method

UNIT TWO: THE RESEARCH PROJECT

- General models, types and structure
- ÿ Stages of the research process
- Model and knowledge of the problem





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UNIT THREE: PLANNING AN INVESTIGATION

- ÿ Problem identification
- ÿ Schedule of activities and resources
- ÿ Types and approaches to research
- ÿ Bibliographic review
- ÿ Population and sample
 - The technical framework

UNIT FOUR: INSTRUMENTS OF MEASUREMENT AND RESEARCHER

- ÿ Equipment, interviews, questionnaires, tests
- ÿ Projective techniques, documents
- ÿ Need for measurement, types and characteristics of scales
 - Operation of variables
 - Statistics
 - Electronic data processing

UNIT FIVE: TEST DESIGN





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ÿ Observation and verification methods

- Experimental, semi-experimental and correlational designs

ÿ Documentary research

- Descriptive research



UNIT SIX:

INTERPRETATION AND COMMUNICATION

ÿ Statements and theories. Theoretical structures, new laws, and hypotheses

ÿ Value of communication: requirements, reference and numbering system

ÿ Publication and support



LITERATURE:

COHEN M and NAGEL E. Introduction to logic and the scientific method. Amorroti Editores, Mexico, 1986.

SANABRIA A. The Research Work

CAMBEL D. Experimental and quasi-experimental designs in social research.





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ARIAS G. Introduction to research techniques in management and behavioral sciences. De. Trillas. 1986.



 **CAMINANDO EN LA EXCELENCIA**



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Pereira, campus Universitario Belmonte - Av. Las Américas carrera 28 No. 96-102. Sede Centro, calle 40 No. 7-30. Sede Comité de Cafeteros Cra. 9a. 36-43.
PBX: (6)3401081 - 3401043