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FREE UNIVERSITY PEREIRA SECTION

UNDERGRADUATE PROGRAM IN ENVIRONMENTAL ENGINEERING



SUBJECT:

**INTEGRAL BASIN MANAGEMENT
HYDROGRAPHIC**

CODE:	12832
SEMESTER:	EIGHTH
AREA:	APPLIED ENGINEERING
MODE	THEORETICAL-PRACTICAL
PREREQUISITE	HYDROLOGY
IHS	3
HTSI	6
NUMBER OF CREDITS:	3

UNIT 1

General concept of watershed
Definition of watershed
Components of a watershed
Boundaries of a watershed
Geographical parts of a watershed
Elements of a watershed
Types of basins according to type of slopes
Morphometric analysis methods
Watershed classification systems

Concept and evolution of watershed management worldwide





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Concept of watershed management in Colombia

History

Objectives of watershed management

Importance of watershed management

Evolution of watershed management in Colombia

Approaches: Protectionist, Multiple use, Integrated management, Participatory and Negotiation



UNIT 2

Legal Framework

National Constitution

National Code of Renewable Natural Resources and the Environment

Law 99/93

Territorial planning and the decrees and laws that are directly related to it
watershed management

UNIT 3

Diagnosis of a watershed

Concept of Environmental Zoning

Baseline or diagnosis of the current environmental situation of the watershed

Diagnostics: biotic, physical, social, economic and cultural

UNIT 4





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Methodological schemes for watershed planning

Methodologies: CVC, FAO, CDMB, CORNARE

Methodological proposal for watershed planning by Silvio Francisco Sánchez, UT

Comparative analysis between methodological schemes

Analysis of watershed management plans



LITERATURE

- Booklet: Management of natural resources in micro-basins supplying rural and municipal aqueducts in Quindio. Regional Autonomous Corporation of Quindio. CRQ. 1997. 31 p.
- Booklet: "The Water of Our Towns." Regional Autonomous Corporation of Rionegro, NARE. CORNARE - Technological Institute of Antioquia. 1995. 44 p.
- Watershed development and soil and water conservation. FAO Bulletin No. 44. 230 p.
- Environmental impact of watersheds. Methodology for conducting studies. SENA-MINAMBIENTE Agreement. 1999. 123 p.
- HENAO SARMIENTO, Jesús Eugenio. Introduction to Watershed Management. USTA. 1998. 396 p.
- Integrated watershed management. National Seminar. INSA. RENORDE - Secretariat of Agriculture of Antioquia.





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- FAO Manual on Watershed Management. "Conservation Guides". No. 13. 8 volumes.
- Technical manual for the integrated management of watersheds. SENA-MINAMBIENTE agreement. 1997. 325 p.
- Proceedings of the Second and Third Colombian Congress on Watersheds. 1985.
- Risaralda River Basin Management Plan. Regional Autonomous Corporation of Risaralda, CARDER. CARDER-CANADA Agreement.
- References on environmental regulations and citizen participation. SENA Agreement. MINAMBIENT. 1999. 191 p.
- Terms of reference for torrential protection studies in the micro-basin of the Santa Helena ravine, Santa Rosa de Cabal, Risaralda. Agreement: GOVERNMENT - HIMAT.
- TORRES MUÑOZ, Myriam Stella. Environmental zoning of a watershed. SENA-MINAMBIENTE Agreement. 1998. 147 p.
- VILLA DURAN, Luis Alberto. The watershed and its role in the study and Conservation of natural resources. SENA. Tolima Regional. 1990. 90 p.

