

Course Syllabi

1. MAES-00127 RESEARCH METHODOLOGY

2. 48 credits hours.

3. Bibliography

- Conducting Research Literature Reviews: From the Internet to Paper, Fink, A., 2013
- Metodología de la investigación: las rutas cuantitativa, cualitativa y mixta. 35497171, Hernández-Sampieri, R., Mendoza T., C. P. , 2018

4. Specific Course Information

- a. The methodology of scientific research includes the study of the set of systematic, critical and empirical processes that are applied to the study of a phenomenon; using a qualitative, quantitative and mixed approach. The subject includes in an introductory way the epistemological theme to explain the way in which new knowledge is generated, then focuses on the quantitative method to construct research designs focused on particular needs. The process is divided into four sections of thirteen units, which follow a logical sequence in the form of a process for learning the proposed contents, skills and attitudes. The process starts with an introduction to the methodology of research, with special emphasis on the definitions of quantitative and qualitative approaches, their similarities and differences. In Part Two, the subject focuses on the approach to the problem of quantitative research. The units focus on quantitative data analysis. Finally, in the last section, the units are aimed at completing the results report.
- b. Prerequisites:
 - TICS-00049 INTRODUCTION TO ENGINEERING
 - IDIO-00064 LANGUAGE AND TECHNICAL COMMUNICATION

5. Learning Objectives of the Course

- a. Know methods and procedures used for the production of scientific knowledge, encouraging students to develop elementary skills for the execution of rigorous research, with special emphasis on the quantitative method.
 - Generate research plans considering the logical order of the research stages.
 - Know and use the Research Methods to design and participate in research projects.
 - Identify the stages of the research process
 - Selecting units of analysis and data collection techniques, in a manner appropriate to specific research problems.
- b. Learning Outcomes
 - It precisely understands and uses basic statistical methods to investigate.
 - It understands, uses and applies quantitative models.
 - It has skills and tools for teamwork that allow it to be an integral part of research teams.
 - Analyzes and knows the research environment.

6. Course Topics

- Introduction to the methodology of research
- The problem
- Data analysis
- Report of results