Course Syllabus

RESEARCH METHODOLOGY IN COMPUTING

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Program: Computer Science

1. Course number and name

CCPG1019 - RESEARCH METHODOLOGY IN COMPUTING

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

MARIA LORENA CARLO UNDA

4. Text book, tittle, author, and year

*Hernándezi S.R., Fernández C.C.,Baptista L.P:. Metodología de la investigación (Quinta edición)

a.Other supplemental materials

*Jackson, Sherry. L.. Research methods and statistics: A critical thinking approach (Fifth Edition)

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5. Specific course information

a. Brief description of the content of the course (catalog description)

This course introduces the fundamental concepts of research methods applied, in general, to any science and in particular to computer science. It also seeks to review the main applications of such methods in computational investigations. Important components are reviewed for writing research articles, main experimental and quasi-experimental design models, quantitative research design, a review of data analysis, through descriptive and inferential statistics linked to research carried out by students, in the area of computer science.

b. Prerequisites

INFERENTIAL STATISTICS - ESTG1002

c. This course is a: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Design a quantitative-type research (in group), based on a literature review and the selection of a problem to be investigated, considering social, ethical and legal aspects.

2.- Analyze results of a research, through the use of descriptive and inferential statistics and statistical packages that support this analysis.

3.- Communicate the results of the analysis of your research orally and in writing.

b. Explicity indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

(3) Communicate effectively in a variety of professional contexts.

(4) Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

(5) Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline.

7. Brief list of topics to be covered

1.- Introduction
2.- Identifying the problem to be investigated
3.- Literature review
4.- Quantitative research design
5.- Experimental designs
6.- Quasi-experimental designs
7.- Survey-based research
8.- Sample design
9.- Analysis of data
10.- Communicating the research