

Discipline MCP5806
Critical Analysis of the Methodology of Scientific Research

Subject Area: 5156

Created: 14/07/2016

Active since: 08/12/2016

Number of credits: 4

Hours:

Theoretical (per week)	Practical (per week)	Self-study (per week)	Duration	Total
5	3	7	4 weeks	60 hours

Faculty Members Responsible:

Luiz Felipe Pinho Moreira

Ricardo Mingarini Terra

Objectives:

To provide essential information for the elaboration of clinical and experimental research protocols, including discussion of the ethical basis for scientific research, presentation of the main models and designs for scientific research and the description of the basic tools used for designing and analyzing results of research protocols. To present to students the models and guidelines employed in scientific papers, as well as in Thesis and Dissertations. To present the bibliographic research tools and the principles of critical analysis of medical literature.

Background:

It is essential for Stricto sensu postgraduate students the appropriate information and training for the elaboration of research protocols and the completion of final papers concerning the results of their research. The specific aspects of the ethical basis of the research, and of the main research models and designs employed in thoracic and cardiovascular surgery is the background of this discipline, which is specifically designed to tackle these issues.

Content:

Principles of Knowledge Management a. Characteristics and Developments of Medical Scientific Knowledge b. Concepts and Limits of the Principles of Scientific Evidence in Surgery 2. Ethical basis of the Scientific Research in Interventionism in Medicine a. Research with Laboratory animals b. Research with human beings c. Specific aspects of organ and cellular transplants d. Development and introduction of new device and equipment 3.Design of clinical and experimental research a. Logical basis and types of research design b. Concept and limits of transversal studies c. Concept and limits of case-control study d. Types and advantages of transversal studies in surgical research e. Pros and cons of controlled clinical trials in the field of surgery 4. Analysis and revision of medical scientific literature a. Bibliographic research method b. The main descriptors in thoracic and cardiovascular surgery

c. Essential aspects of Critical Analysis of Medical Scientific Literature 5. Preparation and implementation of the research protocol a. Scientific research financing mechanisms (development agencies – partnership with the industry) b. Essential items in the elaboration of the research protocol c. Systematic storage and analysis of results. 6. Basic principles to write a scientific paper a. Classification and types of scientific publications b. Terminology and scientific language c. Content of introduction and objective definition d. Essential aspects of methodological description e. Systematic description and presentation of results and conclusions 7. Main computer tools for conducting the research protocols a. Text editing and bibliographic data bank b. Use of data bank and spreadsheet in the organization of the variables studied c. Programs of acquisition and manipulation of data.

Assessment Method:

Refer to observation.

Observation:

Assessment criteria: The module will be assessed on the basis of the participation in virtual forums and the submission of a final paper, which must follow the main aspects of the methodology discussed. Observations: The course is composed of classroom-based theoretical lessons and recorded lessons that will be made available in the virtual study platform. The forums of discussion represent an important part of the teaching methodology, once it intends to develop the critical reasoning about the methodology of research. The conclusion of the course will be based in a seminar for critical discussion of the projects elaborated by students during the course.

Bibliography:

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