

Ministério da Saúde

FIOCRUZ

Fundação Oswaldo Cruz

Instituto Nacional de Infectologia Evandro Chagas



DESCRIPTION OF MANDATORY DISCIPLINES FOCUS AREA: INFECTIOUS DISEASES

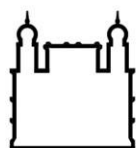
MASTER'S DEGREE AND DOCTORATE

COMMON MANDATORY DISCIPLINES	No OF CREDITS	C.H	DESCRIPTION
Statistics Applied to Health Research	03	90 h	Intends to provide the fundamentals of Statistics applied to Biologic Sciences and Health. Stimulating development of critical analysis and interpretation based on statistic procedures.
Fundaments of Clinical Epidemiology	03	90 h	Intends to provide conceptual bases of Epidemiology as a scientific investigation method applied to origin, evolution and control of health hazards. Practical focus on quantitative health methods applied to diagnosis, prevention, treatment and evaluation of effectiveness of these procedures when dealing with infectious diseases.
Scientific Methodology	03	90 h	Intends to discuss concepts and fundamentals of science and scientific knowledge, approaching the issues of science philosophy and epistemology; Approaching from an inter and transdisciplinary perspective, the main contributions from different disciplinary fields to production of health related scientific knowledge; Providing understanding of health research and clinical research concepts; Enable a comprehensive view of different quantitative and qualitative methodological strategies; Stimulating the student to identify the most adequate methodological strategy to respond to a research problem; Give the student instruments to use the main scientific databases from the health area; Qualifying the student to prepare a research project that is adequate to the ethical and regulatory procedures in force

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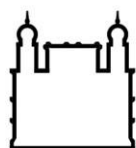
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Methodology of Higher Education in Health	03	90 h	Pedagogic work and exercise of teaching in the health area: the role of the professor, classroom and other teaching and learning spaces; teaching plan as educational action instrument; active learning methods; teaching techniques and classroom practice; evaluation process of teaching and learning; Legislation that governs higher education; Teaching and learning processes for health education; Planning and evaluation of the teaching and learning process in different environments and health contexts; Learning based on learning problems and problematizing; The classroom: methods and techniques; Evaluation of the educational process.
Scientific Seminars Master's 1, 2 and 3	01 (Each)	30 h (Each)	Presentation and monitoring of dissertation project progress for the committee composed by postgraduate program professors and submission to the Doctors Collegiate from the Evandro Chagas National Institute of Infectious Diseases. The student must make project progress presentations to the Doctors Collegiate.
Scientific Seminars Doctorate 1, 2 and 3	01 (Each)	30 h (Each)	Project implementation according to standards from the Evandro Chagas National Institute of Infectious Diseases. The student must make dissertation or thesis project progress monitoring presentations to the committee composed of postgraduate program professors and guest professors in addition to other students in the class.
Qualification Examination (grants credits since 2016)	01	30 h	Evaluation of student's expertise on their project and respect to discipline standards. Project monitoring by the <i>stricto sensu</i> postgraduate coordination. Enabling of thesis/dissertation defense within the regulatory term.

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DESCRIPTION OF ELECTIVE DISCIPLINES

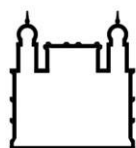
MASTER'S DEGREE AND DOCTORATE

ELECTIVE DISCIPLINES	No OF CREDITS	C.H	DESCRIPTION
Economic evaluation of health technology applications for infectious diseases	02	60 h	The purpose of this discipline is to introduce and disclose economic evaluations of health technologies using examples from infectious diseases. The basic characteristics of health technology evaluations and economic analysis, the main models used to conduct an economic study, the decision making process and other issues. In addition to theory classes, practice classes will be conducted in Excel and/or R.
Biosafety	03	90 h	Biosafety is a wide, transdisciplinary and dynamic field that requires human resources with experience to act in a continuous process of actions that are able to promote health service transformations. The basic purpose is to prevent, dimension and mitigate risks generated by biological, chemical and physical agents or even by incorporation of new technologies and inputs. For that purpose, biosafety education is extremely relevant, mainly inserted as a discipline in postgraduate courses due to its strategic and social importance.
Good Clinical and Laboratory Practices	02	60 h	Intends to regulate performance of clinical tests in Brazil; attributions from the main researcher and study coordinator. Ethics: historical concepts. Ethical Paradigms. Science and Technology. Limits and rupture with ethical limits. Regulatory bodies: Research Ethics Committee, CONEP/Brazil Platform, National Health Surveillance Agency, standards for research involving human beings (196/96 resolution and others).
Computer Science: Introduction to Computer Applications to Assist in Research	02	60 h	Qualifying students to handle bibliographic reference manager and text reference, preparing tools to computerize data: importing and exporting data in different formats, handle and edit data and learning about application tools that facilitate data editing and analysis.

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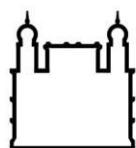
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Laboratory Diagnosis of Infections in Clinical Research	03	90 h	Laboratory approach to diagnosis of infectious and parasitic diseases. Classification (Taxonomy), Morphology, Physiology and Reproduction of pathogenic and opportunistic organisms. Vital cycles for parasitism (in the host) and free-living. Adapting to parasitism, virulence factors and thermotolerance. Classification of diseases caused by pathogenic and opportunistic organisms. Identification of human infection agents in parasitism. Identification of human infection agents isolated in cultivation, through conventional and molecular techniques. Immunological and molecular diagnosis of infections. Molecular methodologies for genotyping, resistance evaluation and molecular epidemiology of microorganisms. Knowledge of laboratory tools required for development of clinical research.
Clinical Tests: Design, Conduction and Analysis (biannual – partnership with ENSP)	04	120 h	Historical perspective of development and clinical test analysis strategies. Basic principles and operational aspects of clinical test performances and meta-analysis. Outlining, statistic data analysis and interpretation of results from clinical tests and meta-analysis in a way that is accessible to clinical researchers.
Statistics Applied to Health Research 2	02	60 h	Practical statistics with advanced methods applied to biological and health sciences. Discusses advanced methods of analysis focusing on regression models. Simple and multiple linear regression models in addition to logistic regression models.
Basic and Clinical Pharmacokinetics	03	90 h	Historical Evolution of Use of Medicine in Human Beings. General Concepts about Planning, Development, Registration and Use of New Medications. Introduction to Physiological Principles of Pharmacokinetics: Absorption, Distribution, Biotransformation and Excretion of Medicine. Introduction to Pharmacokinetic Parameters (Concepts, Manners of Acquisition, Clinical Importance): Cmax, Tmax, ASC, F, Vd, CL, T1/2. Evaluation of Pharmacokinetic Parameters. Causes of Pharmacokinetics Variability and Health Impacts. Examples of Clinical Pharmacokinetics studies and their stages (Stage 1 and 4, including Bioequivalence). Discussion of Pharmacokinetics Studies.
History of Infectious Diseases	02	60 h	The discipline intends to present infectious diseases as one of the objects of analysis of human and social sciences. The perspective is to problematize infectious diseases from a point of view other than the strictly biological, i.e., as social fact, within a context related to certain places and periods. We can relate it social, cultural, economic, political, national and international events. The intention is to have an outlook of history that is different from collecting curious facts or laudatory and non-critical movements focused on characters and institutions. Therefore, understanding the process of

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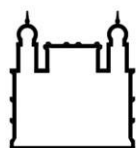
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			creation of truths contributes to further the debate between students who are dedicated to clinical researches of infectious diseases. History of clinical research in Brazil will be discussed in more detail. Clinical research at the Manguinhos Hospital/IPEC. Healing practices during the colonial, imperial and republican periods. Health theories (Pasteur). Infectious diseases and medical specialties. Endemic and epidemic diseases: Chagas disease; leishmaniosis, tuberculosis, Spanish flu, AIDS.
Diagnostic Test Evaluation Methods (biannual – partnership with UFRJ)	02	60 h	Providing conceptual basis of epidemiology applied to Diagnostic Test Evaluation Methods. Practical focus will be given to biostatistics fundamentals employed to validation of diagnostic tests, which includes computer demonstrations.
Quantitative Methods in Behavior Evaluation: application to clinical research	02	60 h	Behavioral risk factors are essential measures to estimate disease burden and are related to most health results. Quantitative methods used to evaluate behavior comprehend definitions and techniques from multiple areas of knowledge, including Medicine, Psychology, Statistics, Epidemiology and Social Sciences. This discipline strives to introduce the main concepts and methods used to evaluate behavioral risk factors.
Clinical Prediction Model	02	60 h	Expository video lessons and guided studies, this course is intended to allow the student to be introduced to the practice of preparation, validation, demonstration and use of clinical prediction models (decision), so that at the end of the discipline the student is able to search for literature and more advanced resources by themselves and use these resources for their research. For performance of guided studies students must have started in the statistic computer software R-project and can bring their own notebook.
Workshop Intended for Publication of Thesis and Dissertations	03	90 h	Preparation of scientific article. Intends to help students and advisors in the task of preparing manuscripts resulting from thesis and dissertations for publication, preferably in scientific publication with impact factor (JCR) of more than 1.6 and/or classified by CAPES as Qualis A1, A2 or B1 at the Medicine I area.
Guidance to Bibliographic Research	03	90	Intends to understand research methods and processes for preparation of scientific and academic papers. Give tools for the student to use the main scientific databases in the health area.

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Clinical Research of Dermatology in Infectious Diseases	04	120 h	Special interest themes in the area of infectious and parasitic diseases related to skin diseases with epidemiologic impact or the ability to promote outbreaks and epidemics. Primary or secondary skin diseases will be approached with topics involving etiological agents, epidemiology, clinical forms, therapy and prevention. Infection agents related to oncogenesis. Anatomopathological study of infectious skin diseases, demonstrating the different techniques used. Themes within the context of dermatosis transmitted by land and water animals and related to the environment, through contact with plants. A self-immune model of cutaneous inflammatory disease within the context of transmission by infectious agent will be discussed.
Text of Scientific Papers	01	30 h	Critically evaluate a scientific paper, understand the main principles that govern ethics in scientific research and publication, understand the main means of storage and formatting of bibliographies in the health sciences area, know the main manners to look for sources of financing for scientific research in the health area, know the basic principles of how to write and prepare a scientific poster, know how to efficiently put together an oral presentation, know the basic principles to write scientific papers, dissertations and thesis.
Immune Response to Infections and Interaction Mechanisms with the Basic Host	04	120 h	Intends to discuss concepts about interaction of cellular and humoral components of the immune system and infectious diseases.
Special topics in important zoonosis for clinical research (biannual – partnership with ENSP)	02	60 h	Current concepts and classifications of zoonosis. “One Health” Concept. Emerging and reemerging zoonotic diseases. Updating and general view of the main zoonosis determined by bacteria, fungus, virus, parasites and rickettsia in Brazil, comprehending geographic distributions, etiological agents, hosts, manners of infection, clinical manifestations, pathological alterations, diagnosis, role of animals as sentinels and prophylactic and control measures involving interaction of veterinary and human medicine. Biosafety when handling animals with suspected zoonosis. The role of CEUAs in clinical research.

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