SINGULAR COURSE UNITS

Name	Programme	Coordinator	Eligibility	Overview	Number of Students (Max./Min.)	Appliication deadline	Registration Deadline	Starting Date	Fee	ECTS	Language
Health Research Methodology	PDICSS	Luís Filipe Ribeiro Azevedo	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to describe and teach basic research steps in medical research. Theoretical principles and skills will be developed to allow the adequate interpretation of scientific evidence, the writing of protocols and proposals for research and accomplishment of research works in this field of knowledge	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	7	Protuguese / English
Biostatistics I	PDICSS	Cristina Maria Nogueira Costa Santos / José Alberto Silva Freitas	Holders of a degree or a master's degree or legal equivalent	This curricular unit is an introduction to the main elementary statistical methods used in the health research literature. It aims to develop skills for interpretation and use of adequate statistical methodologies	Máx 5 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	7	Protuguese / English
Evidence and Decision Making	PDICSS	Matilde Filipa Monteiro Soares / Luís Filipe Ribeiro Azevedo	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to discuss fundamental theory and to develop skills to search, interpret and integrate the best evidence in the health care decision making process.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	5	Protuguese / English
Bioethics and Law	PDICSS	Rui Manuel Lopes Nunes	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to discuss ethical issues in health care research; to develop legal and ethical skills to develop health care research.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Scientific Communication and Publishing	PDICSS	João de Almeida Lopes da Fonseca / Tiago António Queirós Jacinto	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to teach knowledge and to develop adequate skills to communicate and publish ideas and scientific work in health sciences.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Health Research Informatics	PDICSS	Ricardo Filipe Sousa Santos	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to teach Fundamentals principles of the use and application of information and communication Technologies necessary to design and implement research work in health care.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Biostatistics II	PDICSS	Armando Rogério Martins Teixeira Pinto / Hernâni Manuel da Silva Lobo Maia Gonçalves	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to develop basic theoretical ideas and practical skills in more advanced statistical methods applied in the health sciences. To develop skills for interpretation and use of adequate statistical methodologies.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	5	Protuguese / English
Health Technology Assessment – Decision Analysis and Economic Evaluation	PDICSS	Luís Filipe Ribeiro Azevedo	Holders of a degree or a master's degree or legal equivalent	At the end of this course the student should be able to: • Explain the concept and framework of health technologies assessment; • Describe different methods for health technologies assessment; • Assess technologies for treatment, prevention and diagnosis of diseases; • Perform economical assessments of health technologies, knowing and applying the main methods and approaches for economic evaluation of health care programs and technologies (cost analysis, cost-minimization analysis, cost-consequences analysis, cost-benefit analysis, cost-effectiveness analysis, cost-utility analysis); • Know and apply the basic methods and approaches for the assessment and measurement of individual and social preferences and utilities; • Know and apply the basic methods and approaches of decision analysis, including representation and analysis of decision models, in particular, in the context of cost-effectiveness analysis.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	4	Protuguese / English

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Clinical Research – Clinical Trials	PDICSS	João de Almeida Lopes da Fonseca / Cristina Isabel Oliveira Jácome	Holders of a degree or a master's degree or legal equivalent	This curricular unit concerns clinical research-related subject, most notably clinical trials. Students will get theoretical and practical training for results interpretation, design and implementation of studies assessing therapeutic or preventive interventions. At the end of this curricular unit, students should be able to: • Characterize studies on risk/ethiology, diagnostic tests, treatment, prevention and prognosis; • Explain the definition and framing of intervention studies; • Characterize the methods of intervention studies; • Design clinical trials; • Implement clinical trials: Good clinical practices, adverse events, and quality management; • Interpret results from clinical trials; • Discuss the regulatory aspects to be considered in the design and implementation of clinical trials; • Draft protocols for implementation of clinical trials and other clinical research studies.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	4	Protuguese / English
Health services research	PDICSS	João de Almeida Lopes da Fonseca	Holders of a degree or a master's degree or legal equivalent	Describe the major characteristics and scope of Health Services research (HSR) List general subject areas of HSR Describe the relationships between HSR and other research types and advocate linkages between them Summarize the characteristics of research methods commonly used in HSR and identify when they are useful Identify aspects of quality of care and its assessment Identify different categories of secondary data sources and types of secondary analysis Examine the strengths and weaknesses of secondary data analysis Distinguish experimental and quasi-experimental study designs and give examples Recognize the major types of survey research Describe the concepts of measurement and ways to improvement its processes Describe psychometric properties of a measurement instrument Locate sources of secondary data for HSR Review and critique HSR literature Apply basic measurement theory to plan instruments for data collection Use basic tools of Quality Write a peer review report	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	4	Protuguese / English
Laboratorial	PDICSS	Joaquim Adelino Correia Ferreira Leite Moreira	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to teach and develop knowledge and skills to conduct research projects using laboratorial procedures (morphological, funcational and molecular biology).	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Qualitative Research	PDICSS	Luis Filipe Ribeiro Azevedo	Holders of a degree or a master's degree or legal equivalent	This curricular unit will provide the fundamental skills necessary for planning, performing and interpreting qualitative research.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Aetiology, Risk and Prognosis Studies	PDICSS	Claúdia Camila Rodrigues Pereira Rodrigues / Matilde Filipa Minteiro Soares	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to teach knowledge and skils for results interpretation, design and conduct studies of etiology, risk and prognosis	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Diagnosis Studies	PDICSS	Mário Jorge Dinis Ribeiro	Holders of a degree or a master's degree or legal equivalent	This curricular unit aims to teach knowledge and skils for results interpretation, design and conduct studies of diagnosis.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English

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Evidence Synthesis – Systematic Reviews and Meta-Analysis	PDICSS	Luís Filipe Ribeiro de Azevedo	Holders of a degree or a master's degree or legal equivalent	The evidence synthesis studies such as systematic reviews and meta-analysis studies have emerged in order to address the massive and growing accumulation of scientific evidence with diferent study designs and quality levels on specific issues. These studies have a double objective: synthethize evidence and analyse and explain of the heterogeneity found. This curricular unit aims to address methodological issues and essential practices among evidence synthesis studies on that area of health research. At the end of this curricular unit, students should be able to: •Adequately define clinical research questions in this context; •Plan and conduct adequate bibliographic searches; •Define study selection criteria and assess the quality of included studies; •Extract and process data from included studies; •Understand and apply statistical methods in the context of a systematic review and meta-analysis; •Present, write, and critically appraise systematic reviews and meta-analysis.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	4	Protuguese / English
Time Series analysis	PDICSS	Rute Alexandra Borges de Almeida	Holders of a degree or a master's degree or legal equivalent	It is common that quantitative clinical observations and other biomedical data to be indexed at multiple observation times, constituting a series of points indexed in time, that is, a time series. This type of data is also used to assess other time-varying factors, such as counting variables, costs, rates, etc., and is commonly used in epidemiology, technology assessment, economic assessment or as a management tool, either for analysis or forecasting. In this course it is intended: - To provide the students with concepts and methodologies suitable for the analysis and modeling of time series, in particular those most used in clinical and/or in health services research; - To introduce the use of estimation, modeling and forecasting tools that can be used by students in their future research; - Put the students in contact with research problems involving biomedical time series and others related to health services or health research.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Suvival and Longitudinal Data Analysis	PDICSS	Luís Filipe Ribeiro de Azevedo	Holders of a degree or a master's degree or legal equivalent	After completing this curricular unit, Students should be able: •To know and understand the underlying theory in survival (time-to-event) data analyses and longitudinal data analyses of biomedical studies; •To be able to analyse survival (time-to-event) data and longitudinal data in biomedical studies with appropriate data analysis methods; •To be able to interpret analytic methods used throughout the literature using survival analysis and longitudinal data analysis methods; •To know and understand the underlying theory in advanced methods of joint modelling of survival and longitudinal data.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Causality and Modern Approaches in Causal Inference	PDICSS	Luís Filipe Ribeiro de Azevedo	Holders of a degree or a master's degree or legal equivalent	After completing this curricular unit, Students should be able: •To know and understand the potential or counterfactual outcomes approach to defining causal effects and the basics of modern theories of causal inference; •To know and understand methods for graphical representation of causal relationships; •To implement Directed Acyclic Graphs (DAGs) to represent assumptions and inform analysis plans in causal inference; •To know and understand the key sources of bias in analyses of experimental and observational data, and how to investigate them using DAGs; and •To appreciate key methods and modelling approaches which can be used to estimate causal effects, and understand the assumptions underlying them.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Infodemiology and bibliometrics	PDICSS	Bernardo Manuel de Sousa Pinto	Holders of a degree or a master's degree or legal equivalent	At the end of this course the student should be able to: •Know the main methodological approaches within the context of infodemiology studies; •Plan, implement and critically assess GoogleTrends-based infodemiology studies; •Extract and process microblogging (e.g., Twitter) data; •Know and implement time series analysis methods within the context of infodemiology studies; •Know the main bibliometric metrics available and respective application levels; •Extract and process relevant scientific publications-related metadata; •Know and implement i) evidence mapping techniques ii) visualization techniques applied to thematic and methological areas of health-related scientific publications and projects; •Know and use i) big data processing methods in text corpora using a map reduce algorithm, and ii) basic algorithms of text mining.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English

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Surgical Clinical Research	PDICSS	Sérgio Maniel Moreira Sampaio	Holders of a degree or a master's degree or legal equivalent	To know: • What is surgical clinical investigation. • The specifics of clinical research in surgery (main types of research opportunities) • The limitations of clinical research in surgery. • The main weaknesses to which clinical research in surgery is subject. Appreciate: • Published clinical surgical research in a critical manner • Implications for clinical practice that published clinical surgical research can and cannot allow To execute: • The design of a surgical clinical investigation protocol	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Biostatistics Laboratory	PDICSS	Cristina Maria Nogueira da Costa Santos e José Alberto da Silva Freitas	Holders of a degree or a master's degree or legal equivalent	This unit intends to place the students in a problem-oriented learning scenario, developing a laboratory project in health data analysis, preparing their skills in carrying out research in this area, applying the knowledge acquired in Biostatistics I and I curricular units. At the end of this curricular unit students should be able to develop a laboratory project with health data analysis.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Network meta-analysis and diagnostic test accuracy studies meta-analysis	PDICSS	Luís Filipe Ribeiro de Azevedo	Holders of a degree or a master's degree or legal equivalent	After completing this curricular unit, Students should be able to: •Know the main concepts and assumptions in network meta-analysis; •Implement network meta-analysis models (for continuous and dichotomous effect size measures) using software R; •Use CiNeMa approach to assess the quality of evidence in the context of a network meta-analysis; •Know the main concepts and statistical models for meta-analysis of diagnostic test accuracy studies; •Implement diagnostic test accuracy studies meta-analysis using software R; •Use QUADAS-2 criteria to assess the quality of evidence in the context of a systematic review of diagnostic test accuracy studies	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English
Digital Health	PDICSS	Ricardo João Cruz Correia	Holders of a degree or a master's degree or legal equivalent	At the end of this course the student should be able to: •Assess the potentialities and limitations of remote healthcare via information technologies; •Identify the main technologies used in remote communication between health information systems; •Plan, structure and assess telemedicine and e-health services; •Understand the need (and difficulties) for health information systems assessment; •Know the different assessment models in medical informatics; •Know the main challenges in technology certification and transfer; •Know the main potentialities and limitations of mobile health.	Máx 2 singular course units students	Not applicable	Two weeks before the start of UC	The schedule will be available at http://pdicss.med.up.pt	300 €	3	Protuguese / English