

**SINGULAR COURSE UNITS**

Name	Programme	Coordinator	Eligibility	Overview	Number of Students (Max./Min.)	Application Deadline	Registration Deadline	Starting Date	Fee	ECTS	Language
Research Methods in Health Sciences	Master Programme in Health Evidence and Decision	Bernardo Manuel de Sousa Pinto and Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	The Health Research aims to respond to issues in clinical medicine and health of populations, contributing to the knowledge and decision making. The issues addressed in this area concern the study of diagnosis, treatment, prognosis, etiology and prevention of the disease and to study the frequency of phenomena and associated entities.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	9	Portuguese
Biostatistics I	Master Programme in Health Evidence and Decision	Cláudia Camila Rodrigues Pereira Dias and Teresa Sarmiento Henriques	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	This unit aims to empower the students with theoretical foundations and practical approach to basic statistical methods used in clinical research, assessment of technologies and health service research. After this course unit the students should be able to apply the correct statistical methodology for data analysis using statistical software and interpret the results.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	9	Portuguese
Evidence and Decision	Master Programme in Health Evidence and Decision	Matilde Filipa Monteiro Soares and Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	The syllabus of this course was designed to match the defined learning outcomes. Specifically, it allows students to acquire theoretical knowledge of the concept and framework of health decision, the basic structure of health decision, and the step-by-step approach to health decision. By this syllabus, students should also be able to discuss critically this issues. The syllabus of this curricular unit also foster the development of skills that enable students to perform a step-by-step approach to health decision, identifying options and alternatives and making a critical analysis and interpretation of evaluation studies of diagnostic, prognostic and therapeutic intervention to integrate evidence in health decision-making process.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese
Ethics and Law	Master Programme in Health Evidence and Decision	Rui Manuel Lopes Nunes	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	The syllabus allows students to learn the law applicable to ethical issues in the field of research in Health, fundamental ethical principles underlying ethical issues in this area of research, connection between ethical issues and economic factors and the fundamental principles of biolaw. The syllabus also allows students to critically analyse the application of legal and ethical principles to health research, developing skills that allow them to design, submit and implement research projects in this area in accordance to ethical principles and applicable legislation.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese
Scientific Communication and Publication	Master Programme in Health Evidence and Decision	Mário Jorge Dinis Ribeiro and Pedro Pereira Rodrigues	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	This curricular unit aims to train students in the interpretation and elaboration of communication techniques and scientific publication, including general formatting of scientific articles, oral presentations and scientific posters, creation of tables and figures and methodology of scientific publication.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese
Informatics in Health Research	Master Programme in Health Evidence and Decision	Pedro Pereira Rodrigues	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Information and communication technologies: Data, information and knowledge; data support; interfaces for data collection; databases; interfaces for data management; internet and web-technologies.  Medical informatics: hospital information systems, electronic clinical records; clinical decision support systems.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese
Biostatistics II	Master Programme in Health Evidence and Decision	Cristina Maria Nogueira da Santos and Andreia Sofia Costa Teixeira	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Explain the theoretical and practical foundations to the application of advanced statistical methods applied to clinical, health services and health technologies assessment research; Perform logistic regression, Poisson regression, survival analysis, repeated measures, longitudinal studies and multi-level analysis; Interpret results of logistic regression, Poisson regression, survival analysis, repeated measures, longitudinal studies and multi-level analysis; Explain the basics of the application and interpretation of Bayesian inference.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese

Health Technology Assessment	Master Programme in Health Evidence and Decision	Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Explain the concept and framework of health technologies assessment (HTA) Describe different methods for health technologies assessment. Assess technologies for treatment, prevention and diagnosis of diseases Perform systematic reviews and meta-analysis in HTA 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) To know and apply the basic methods and approaches for the assessment and measurement of individual and social preferences and utilities To know and apply the basic methods and approaches of decision analysis, including representation and analysis of decision analytic models, in particular, in the context of cost-effectiveness analysis Take decisions on technology assessment, taking into account social and ethical issues Analyse the role of health technologies assessment in technologies dissemination, application to clinical practice, costs evaluation and	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	6	Portuguese
Health Services Research	Master Programme in Health Evidence and Decision	Cristina Isabel Oliveira Jácome and João de Almeida Lopes da Fonseca	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Definition and framework of HSR: Research in organization and delivery of healthcare Evaluation of effectiveness: Inadequate use of health interventions and resources: Translating evidence into clinical practice – implementation methods. Clinical guidelines development: Needs assessment and patients' preferences. Patient-, professional-, organizational- and population-based interventions: Evaluation of access, efficiency and safety of delivery of care. Healthcare Quality - methods for continuous improvement and audits. Concepts of healthcare systems, financing models and of resource allocation policies. Outcome research Measurement issues in health & healthcare: Standardized measurement instruments: Patient-reported outcomes (e.g. quality of life) and patient-experience outcomes (e.g. patient satisfaction): Systematic measurement of outcomes in health – disease registries, surveillance systems and epidemiologic, clinical & administrative databases.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	6	Portuguese
Clinical Research	Master Programme in Health Evidence and Decision	Sérgio Manuel Moreira Sampaio	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	This field of research focuses on patients as individuals, aiming at answering research questions of clinical medicine. Studies of diagnostic tests, treatment, prognosis and etiology will be studied.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	6	Portuguese
Thesis, project and traineeship protocols I	Master Programme in Health Evidence and Decision	Mário Jorge Dinis Ribeiro and Matilde Filipa Monteiro Soares	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	At the end of this curricular unit students should be able to: - Identify areas that need the development of new evidence. - Formulate feasible research questions, interesting, new, ethical and relevant in an adequate and complete way, according to the PICO structure; - Identify and bring together the most appropriate supervision team for the implementation of the proposed research project; - Perform an appropriate literature review in order to justify the need for the project development as well as to characterize the state of the art. - Identify the necessary elements to create a protocol to submit the project to the Scientific Council, the Ethics Committee, for funding applications and to the development of a master's thesis. The curricular units of thesis, project and traineeship protocols I, II and III work autonomously. However, there is a sedimentation of knowledge skills and competences acquired in each of the UCs, carried out sequentially and progressively.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese

Laboratory Research	Master Programme in Health Evidence and Decision	Amândio António Rocha Dias de Sousa	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Writing of an experimental protocol: List the laboratory safety standards: Describe the animal models of disease: Characterize the functional and dynamic models for the study of the organs and systems: Implement laboratory techniques for the study of tissues (morphometry and immunohistochemistry; microscopy), for the study of cells (cell culture; stem cells), DNA isolation, mRNA and proteins from biological products: Perform a transcriptome analysis (quantification of mRNA) of the genome (DNA quantification) and proteome (protein quantitation): <u>Analyze results of laboratory techniques covered in the curricular unit</u>	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Qualitative Research	Master Programme in Health Evidence and Decision	Altamiro Mauel Rodrigues da Costa Pereira and Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Qualitative research uses an interpretive, naturalistic and holistic approach to the world. Their objects of study are the values, beliefs, representations, habits, attitudes and opinions of individuals in their social context. In this area, objects and issues are addressed in their natural context, trying to understand the phenomena concerning to the meaning that people give to them.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Studies of etiology, risk and prognosis	Master Programme in Health Evidence and Decision	Matilde Filipa Monteiro Soares and Cláudia Camila Rodrigues Pereira Dias	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Broad concepts concerning aetiology, risk and prognosis. Assessment of related studies. Assessment of the importance of the results. Development of multivariable models using different techniques	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Diagnostic Studies	Master Programme in Health Evidence and Decision	Mário Jorge Dimis Ribeiro	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Measurement in research and diagnosis in medicine. Definition of reproducibility and validity. Reproducibility measures (agreement proportions, kappa statistics and proportions of specific agreement). Validity measures (sensitivity, specificity, likelihood ratios, probabilities and Bayes' theorem, predictive values and ROC curves). Multiple tests. Study design. Study quality and levels of evidences. Validation and cost-benefit. Integration in clinical decision making. Screening tests.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Intervention Studies – Clinical Trials	Master Programme in Health Evidence and Decision	João de Almeida Lopes da Fonseca and Cristina Isabel Oliveira Jácome	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Intervention Studies – Definition and framing: Clinical trial design, methodological aspects and structuring of clinical trials protocols - the recommendations SPIRIT (Standard Protocol Items) Recommendations for Interventional Trials): Regulation and legislation: Introduction to the recommendations of the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH): Good Clinical Practices: Practical aspects in the implementation of a clinical trial: Quality management: Organizational, administrative and financial aspects: Presentation of results of intervention trials – CONSORT recommendations (Consolidated Standards of Reporting Trials): Clinical trials controversies .	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Cost-Effectiveness and Decision Analysis Studies	Master Programme in Health Evidence and Decision	Francisco Nuno Rocha Gonçalves and Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	Decision analysis and cost-effectiveness studies in health aim to answer questions related to evidence applied and with the process and technologies involved in decision making in various contexts of clinical practice, namely, diagnosis, treatment, prevention and prognosis.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese
Studies of Evidence Synthesis	Master Programme in Health Evidence and Decision	Luis Filipe Ribeiro de Azevedo	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme	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 different study designs and quality levels on specific issues. This studies have a double objective: synthesize 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.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 C	3	Portuguese

Probabilistic Graphical Models	Master Programme in Health Evidence and Decision	Pedro Pereira Rodrigues	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme.	This unit aims to empower the students with necessary knowledge and skills to use modern methods of probabilistic reasoning for biomedical problems, more specifically regarding theory and practice of Bayesian networks for interdependencies exploration and clinical decision support.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese
Data Analysis Techniques	Master Programme in Health Evidence and Decision	Cristina Marie Mário Jorge Dimis Ribeiro Nogueira da Costa Santos e Andreia Sofia	a) holders of a graduation degree or legal equivalent by national or foreign higher education institutions; b) holders of an academic, scientific or professional curriculum accepted by the programme's scientific commission as an evidence of the candidate's ability to complete the programme.	Statistical methods for assessing agreement and reproducibility of measurements, considering both categorical and continuous variables.  Statistical methods for repeat-measures analysis and analysis of longitudinal studies.	Maximum: 3 singular course unit / internal mobility students; Minimum: 6 MEDS' students	Not applicable	Two weeks before the start of UC	The calendar will be published at <a href="http://meds.med.up.pt/">http://meds.med.up.pt/</a>	250 €	3	Portuguese