Advanced Clinical Research

Code: 44210
ECTS Credits: 10

2025/2026

Degree	Type	Year
Applied Clinical Research in Health Sciences	OT	0

Contact

Name: Gerard Urrutia Cuchi

Email: gerard.urrutia@uab.cat

Teachers

Magi Farre Albaladejo

Susan Webb Youdale

Ignacio José Gich Saladich

Xavier Bonfill Cosp

Ivan Sola Arnau

Helena Bascuñana Ambros

Javier Andrés Pérez Bracchiglione

Nieves Sopena Galindo

(External) Anna Berenguera Ossó

(External) Concepció Violan Fors

(External) Gerard Álvarez Bustins

(External) Gonzalo Casino Rubio

(External) Marta Roqué Figuls

(External) Olga Canet Vélez

(External) Vicenç Ruiz de Porras Fontdevila

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Those specific to admission to the master's degree and understanding of written technical English.

Objectives and Contextualisation

This module is considered as advanced training in research methodologies focused on fields related to health sciences, further exploring some specific aspects of special relevance that were taught superficially in the introductory module of basic methodology. Specifically, the module places special emphasis on some practical methodological tools (guidelines and instruments) for the development and conduct of clinical research studies as well as their practical application in specific studies by way of illustration. This master's degree is adapted to the educational and methodological proposals of the European Higher Education Area. The structure of this master's degree is adapted to that established in the Spanish Royal Decree 1393/2007, on official university education in Spain, and has a favourable verification report from the Spanish National Agency for Quality Assessment and Accreditation (ANECA).

It is addressed at university graduates of disciplines related to people's health from different perspectives.

The objectives of the module are:

- To provide adequate knowledge, skills and competences to plan, design and develop research studies and projects relevant in health, care and quality of life fields, both from a qualitative and a quantitative approach.
- To acquire specialized skills to solve problems in research and innovation, with a view to developing new knowledge and integrating this in the field of health-condition assistance; including the skills required to design research projects that could receive support and funding from funding agencies.
- To provide the required knowledge and skills to disseminate research results through meetings, conferences and symposia, as well as by publishing them in scientific journals.
- To address the main lines and methodologies of research and innovation in the fields of family and community healthcare, clinical nursing, community participation and action, quality of life in health processes, disease and health care, that allow to translate the results from research to the professional field.

Competences

- Act respecting the Independent Ethics and legal aspects of the research and of the professional activities.
- Communicate and apply knowledge to the public and cultural debate.
- Communicate effectively and clearly, both orally and in writing, justifications, results and conclusions of the investigation.
- Critically evaluate, identify and classify the sources of scientific information according to the type of evidence and the scientific relevance.
- Development scientific knowledge, creativity and Critical Thinking.
- Differentiate lending and the methodology applied scientific research.
- Formulating problems, hypotheses and research objetivos.
- Participate in the development of a protocol for basic, clinical or experimental research, based on scientific methodology.
- Prove that the methodologies covering estadísticas básicas utilizadas in the biomedical and clinical estudios y análisis use the tools of the modern computational technology.
- Working as part of a group along with other professionals, understand their views and cooperate constructively.

Learning Outcomes

1. Act respecting the ethical and legal aspects of research and professional activities.
2. Always refer to the critical reading of a job.
3. Build a hypothesis that reflects the final conclusion of the investigation and that action can be confirmed or rejected as a result of it.

4. Collect scientific information and classify it according to levels of evidence and scientific relevance within the different areas of Internal Medicine.
5. Communicate and apply knowledge to the public and cultural debate.
6. Critically analyze according to the rules of EBM.
7. Describe how work clinical or translational research according to their relevance, feasibility and resources available in different areas of Internal Medicine is planned.
8. Describe the different levels of evidence and their characteristics.
9. Describe the most significant differences between qualitative and quantitative research.
10. Design a schedule.
11. Design hypotheses and concrete targets of interest in various areas of Internal Medicine
12. Develop a critical reading of the scientific literature structured according to the various designs.
13. Develop a critical reading structured systematic reviews.
14. Develop a simple, direct and testable hypothesis.
15. Develop scientific knowledge, critical thinking and creativity.
16. Distinguish the basic elements of analysis of results and drawing conclusions.
17. Distinguish the basic elements of analysis results and how to introduce them into the database and analyzed with the basic computer packages.
18. Explain the relationship between the type of objectives, assumptions and research question in an original article.
19. Find information in the databases of health sciences for qualitative research.
20. Formulate project cooperatively.
21. Formulated from an original reading of the research question and move to the statement of a working hypothesis article.
22. Handle database leaves, both independent and linked to statistical packages.
23. Identify a research question that is relevant and transferable to the care medicine.
24. Identify and set out the main objectives and consistent with the hypothesis side and able to respond to the research question as well as raise new hypotheses.
25. Identify sources of scientific information in nursing according to the type of knowledge that is explored.
26. Identify strengths and weaknesses, with emphasis on that playable, which must be adapted and innovations that can be introduced.
27. Identify the different bibliographic databases in health sciences.
28. Interpret the results of studies for application in both groups of patients and individual levels through the perspective of evidence-based nursing.
29. Know and use computer databases.
30. Know and use the rules of the Evidence-Based Medicine to discriminate between reliable and robust sources (primary and secondary).
31. Know the sources and funding institutions.
32. Knowing how to establish the necessary contacts and collaborations.
33. Knowing the tools of statistical analysis.
34. Learn to select the relevant scientific sources for research in particular.
35. List the basic strategies of qualitative analysis.
36. Planning publications, patents or other expected results.
37. Search relevant references.
38. Similar to the previous section, applied to the specific scope of the C of S.
39. Structuring and writing competitive research project.
40. Using a statistical package.
41. Working as part of a group along with other professionals, understand their views and cooperate constructively.

Content

This module will explore different types of clinical research study (designs) applied to health field problems, and will look at the key aspects of its design and main sources of bias, the analysis and interpretation of results, and the aspects that should be considered to apply the results to specific patients or contexts. The module will also explore the acquisition of necessary skills for its application.

- Research in science communication.

- Outcome variables and measurement of the effects of interventions.

- Advanced searches for evidence.

- Alternative formats for synthesising scientific knowledge: types of review.

- The challenges of research in non-pharmacological interventions.

- Complex interventions.

- Quasi-experimental studies.

- Qualitative research: concepts and resources.

- External validity and applicability of the results of clinical studies.

- Research on non-pharmacological interventions. The TIDieR tool.

- Research on rare diseases: pathology registries and special research designs.

- Research in infectious diseases.

- Real world evidence studies in primary care: register-based research.

- Health and clinical information systems for research.

- Research studies based on hospital clinical records.

- Adjustment in clinical research studies.

- Pragmatic clinical studies. The PRECIS-2 tool.

- Ethics in research.

- Qualitative research studies in primary care.

- Innovative interventions and the use of ICT in health.

- How to write the final report of a research project.

- Sex and gender perspectives in research.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Comprehensive reading of texts. Reviews, (individual or group) bibliographic essays from a guideline. Drawing up schemes, concept maps and summaries.	136	5.44	
On-site sessions	75	3	
Type: Supervised			
Scheduled tutoring	25	1	

The module includes of a set of 24 sessions on the topics specified in the previous section. On-site lessons will include basic specific bibliographic references provided to the students in each session. Additionally, in some selected sessions, students will be encouraged to conduct an individual ('deliverable') practice papers from a suggested piece of literature or material. These papers are intended to assess the degree of understanding of methodological or practical aspects considered essential to guarantee the students' competence to successfully complete a doctoral thesis project in Health Sciences.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class attendance	20%	0	0	1, 6, 34, 19, 37, 5, 32, 2, 29, 30, 33, 31, 3, 7, 8, 9, 15, 12, 13, 11, 10, 16, 17, 14, 35, 39, 18, 21, 20, 24, 27, 25, 26, 23, 28, 22, 36, 4, 38, 41, 40
Delivery of written works or practical activities	35%	12	0.48	1, 6, 34, 2, 29, 33, 8, 12, 13, 11, 16, 14, 18, 21, 24, 27, 26, 23
Exam (multiple choice test)	45%	2	0.08	19, 5, 29, 30, 8, 15, 12, 13, 27, 4

The assessment system is organised in 2 sections (exam and delivery of home tasks), each of which will have a

Bibliography

Bibliografia bàsica: 1.- Argimon JM, Jiménez J. Métodos de investigación clínica y epidemiológica. 4ª ed. Madrid: Elsevier España, SA, 2012.

2.- Polit , D. Hungler, B. Investigación científica en ciencias de la salud. (6ª Ed). México: McGraw- Hill Interamericana, 2003.

3.- Hernández Sampieri R, Fernández Collado C, Baptista Lucio P. Fundamentos de metodología de la investigación. Madrid: McGraw-Hill, 2007.

4.- Badia Llach X, editor. La investigación de resultados en salud: de la evidencia a la práctica clínica. Barcelona: Novartis, 2000.

5.-Vazquez Navarrete, ML (coord.); Ferreira da Silva, MR; Mogollón Pérez, AS; Fernández de Sanmamed Santos, MJ; Delgado Gallego, ME; Vargas Lorenzo, I. Introducción a las técnicas cualitativas de investigación en salud. Cursos GRAAL 5. Serveis publicacions UAB. Bellaterra. 2005.

6- Báez y Pérez de Tudela, J. Investigación cualitativa. Madrid: ESIC. 2007.

7.- Cobo E, Muñoz P, González JA. Bioestadística para no estadísticos: bases para interpretar artículos científicos. Ámsterdam: Elsevier Masson, 2007.

8.- Hulley SB...[et al.]. Diseño de investigaciones clínicas. 3ª ed. Barcelona: Wolters Kluwer, Lippincott Williams & Wilkins, 2007

9.- Ruiz Morales A, Morillo Zárate LE. Epidemiología clínica: investigación clínica aplicada. 1ª ed. 2ª reimp. Bogotá: Médica Panamericana, 2006.

Bibliografia de consulta:

1.- Rodríguez del Águila MM, Pérez S, Sordo L, Fernández MA. Cómo elaborar un protocolo de investigación en salud.Med Clin (Barc).2007;129(8):299-302. 4

en salud. Med Clin (Barc).2007;129(8):299-302.

2.- Altman DG, Moher D. Elaboración de directrices para la publicación de investigación biomédica: proceso y fundamento científico. Medicina Clínica. 2005; 125 (Supl.1): 8-8.

Enlaces web:

1.- http://ebevidencia.com/

2.- https://www.equator-network.org/reporting-guidelines/

3.- https://www.epistemonikos.org/es/

4.- http://www.bibliotecacochrane.com/

5.- http://www.redcaspe.org/herramientas/instrumentos

6._ http://methods.cochrane.org/bias/

Software

No specific softward is requiered for this module.

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(SEMm) Seminars (master)	101	Catalan/Spanish	second semester	afternoon
(TEm) Theory (master)	101	Catalan/Spanish	second semester	afternoon