

Research School in Medical Science, MEFMV2F

Forskarskola i medicinsk vetenskap

13.5 credits

Third cycle

General information

The course is a compulsory component of research studies at the Faculty of Medicine and is aimed at third cycle students at Lund University's Faculty of Medicine.

Language of instruction

English

Purpose

The aim of the course is to provide a foundation based on the theory of science, methodology and ethics for scientific work in all steps of the research process.

Learning outcomes

Knowledge and understanding

- identify and summarise key concepts and theories that are of importance for the student's own thesis
- identify ethical considerations and problems in various research contexts and in the student's own research
- compare perspectives on evidence and explain epistemological differences
- identify and discuss differences in study design, methods and management of quantitative and qualitative data in relation to a research question and research paradigm

Competence and skills

- apply ethical guidelines and legal rules in the student's own research and in that of others
- analyse and present the student's own research and that of others from an ethical perspective
- independently select, justify, examine and evaluate a statistical method of relevance for the student's own research or a specific research question
- problematise perceptions on gender, diversity, sustainability and equal rights in relation to the student's own research field
- communicate, orally and in writing, the student's own research in a manner that is relevant in relation to the selected target group, situation and context
- develop and argue for search strategies for the student's own research in relevant databases and explain the research publication process

Approved by FUN on 8 June 2021, applies from 1 July 2021

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Judgement and approach

- justify the need for the student's continued personal competencies development in relation to their professional development as a researcher
- critically reflect on the ethical challenges and standpoints through the various steps of the research process, as well as on the shortcomings and merits of ethical guidelines and legal rules in research

Course content

- Theory of science and the concept of evidence
- Research methods
- Research ethics
- Oral and written scientific communication
- Medical statistics
- Epidemiology
- Health economics
- Research design

Course design

The course consists of six different parts. Part IV, Applied Statistics II, is offered as either a) Epidemiology and Health Sciences, b) Biomedicine and Laboratory Medicine or c) Clinical Research. The working methods vary and consist of lectures, seminars, group work, report writing and self-study of the items on the reading list. Other working methods include demonstrations and practical exercises in information and research data management and utilisation of tools for quantitative evaluation. Oral and written reflections, communication exercises, producing and adapting texts for different target groups and exercises in identifying cited articles and relevant journals for the student's own publication are other components.

Part I: Introduction to Research Methods, 3 credits

Part II: Scientific Communication, 1.5 credits

Part III: Applied Statistics I, 1.5 credits

Part IV: Applied Statistics II, 3 credits, offered as one of three specialisations

- a) Epidemiology and Health Sciences, b) Biomedicine and Laboratory Medicine c) Clinical Research

Part V: Research Ethics, 3 credits

Part VI: Oral Communication, 1.5 credits

Assessment

Each part of the research school is assessed separately either orally or in writing on an individual basis or orally in groups based on the exam components specified in Appendix 1.



MEDICINSKA FAKULTETEN

COURSE SYLLABUS Reg. no U 2022/760

3(5)

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Grades

Grading scale: Pass or Fail

Entry requirements

Admitted to research studies in medicine

Reading list

Specified in Appendix 2.

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Appendix 1: Exam components for the Research School in Medical Science (MEFMV2F) course

- 2101 Introduction to Research Methods, 3.0 credits. Written individual report. Grading scale: Pass or Fail.
- 2102 Scientific Communication, 1.5 credits. Written assignment on the publication process. Written assignment on the student's own research for general public target group. Written assignment on the student's own research for researcher target group. Written assignment on information search strategies based on the student's own project. Grading scale: Pass or Fail.
- 2103 Applied Statistics I, 1.5 credits. Written individual exam. Grading scale: Pass or Fail.
The student will select *one* of the modules: 2104, 2105 or 2106
- 2104 Applied Statistics II, 3 credits Clinical Research. Written individual take-home exam. Grading scale: Pass or Fail.
- 2105 Applied Statistics II, 3 credits. Biomedicine and Laboratory Medicine. Written individual take-home exam. Grading scale: Pass or Fail.
- 2106 Applied Statistics II, 3 credits. Epidemiology and Health Sciences. Written individual take-home exam. Grading scale: Pass or Fail.
- 2107 Research Ethics, 3 credits. Written individual report. Grading scale: Pass or Fail.
- 2108 Scientific Communication, 1.5 credits. Two oral presentations and a written reflection. Grading scale: Pass or Fail.

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Appendix 2:

ALLEA. (2017). The European Code of Conduct for Research Integrity.

Bergman, E., de Feijter, J., Frambach, J., Godefrooij, M., Slootweg, I., Stalmeijer, R., & van der Zwet, J. (2012). AM last page: A guide to research paradigms relevant to medical education. *Academic Medicine*, 87(4), 545.

Björk, J. (2011). *Praktisk statistik för medicin och hälsa*. Stockholm, Liber. ISBN: 9789147103430.

European Union (2020). Gendered Innovations 2. How Inclusive Analysis Contributes to Research and Innovation. H2020 Expert Group to update and expand “Gendered Innovations/Innovation through Gender” Chairperson: Londa Schiebinger Rapporteur: Ineke Klinge (EU report) Download in PDF format from <https://op.europa.eu/>

Graneheim, U. H., Lindgren, B. M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, 56, 29-34.

Kirkwood, B.R., & Sterne, J. A.C. (2003). *Essential Medical Statistics 2nd ed*. Philadelphia, Wiley-Blackwell. (512 pages) ISBN: 9780865428713.

Korstjens, I., & Moser, A. (2017). Series: Practical guidance to qualitative research. Part 2: Context, research questions and designs. *European Journal of General Practice*, 23(1), 274-279.

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120-124.

Lindstedt, I. (2015) *Talarens hantverk*. Lund; Studentlitteratur (220 pages) ISBN: 9789144096667.

Malterud, K. (2016). Theory and interpretation in qualitative studies from general practice: why and how? *Scandinavian Journal of Public Health*, 44(2), 120-129.

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative Health Research*, 26(13), 1753-1760.

Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 1: Introduction. *European Journal of General Practice*, 23(1), 271-273.

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, 24(1), 9-18.

Swedish Research Council (2011). *God forskningssed* (handed out at the beginning of the course).

Vittinghoff, E., Glidden, D.V., Shiboski, S.C., McCulloch, C.E.C (2007). *Regression Methods in Biostatistics. Linear, Logistic, Survival and Repeated Measures Model*. New York, Springer-Verlag, New York Inc. (360 pages). ISBN: 9781461413530.

Zanders, E., & MacLeod, L. (2018). *Presentation Skills for Scientists*. 2nd ed. Cambridge University Press. ISBN: 9781108469425.