

Master's degree in Vitality and Ageing

For pioneers of tomorrow's medical care



Study guide
2014-2015



Universiteit Leiden
The Netherlands



LEIDEN UNIVERSITY MEDICAL CENTER

Leyden Academy

ON VITALITY AND AGEING



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1. Overview of the academic year

Learning outcome	Course	Objective	Content	ECTS	Study method	Examination
Acquisition of a thorough understanding of current concepts of gerontology and to which extent it will change the future medical care	GERO.00	Understanding the ageing process from a scientific evolutionary perspective	Ageing theories, evolutionary shadow, ageing research, patho-physiological processes of ageing	2	Lectures, self-study, assignments	None
	GERO.01	An understanding of the biological determinants and consequences of the ageing process	Biological mechanisms of ageing and development (damage, repair, genetics, inflammation, disposable soma theory)	5	Lectures, self-study, assignments	Grant proposal
	GERO.02	Knowledge of the anthropological and social-gerontological aspects of ageing	Social aspects of ageing, quality of life	4	Lectures, self-study, assignments	Qualitative interview report
	GERO.03	An understanding of socio-demographic aspects of ageing	Demography: life expectancy, healthy life expectancy, compression of morbidity, epidemiological /demographic transition, international differences in life expectancy	3	Lectures, self-study, assignments	Country essay and short presentation
Acquisition of a thorough understanding of the current concepts in geriatrics (e.g. multimorbidity) and how this affects medical practice	GERI.01	The mastery/ability to think and act in terms of multimorbidity, including concepts such as frailty, complex treatments, and multicausal factors of ageing	Frailty, complex treatment, polypharmacy, multicausal factors of ageing, immobility, instability, incontinence and impaired intellect/memory, elderly care, delirium, use of multiple medications, impaired vision and hearing	6	Lectures, case-description, visit to the hospital, self-study, assignments	Patient case description
	GERI.02	Knowledge of the determinants of vitality and healthy ageing, and insight in different stakeholders and interventions to promote them	Coping, vitality, prolonged quality of life, prevention of disease	4	Lectures, self-study, assignments	Fundraising letter

1. Overview of the academic year

Learning outcome	Course	Objective	Content	ECTS	Study method	Examination
Acquisition of a thorough understanding of different aspects of healthcare structure related to patient care in a multidisciplinary setting	HS.01	Knowledge of structure and financing of health-care	Comparative analysis of health-care systems and financing of health care Beveridge, Bismarck and Semashko model, out of pocket model	3	Lectures, self-study, assignments	Policy document
	HS.02	knowledge of models of care	Complex care, models of care. Included models: chronic care model, preventive care model, integrative care model	2.5	Lectures, self-study, assignments	Network analysis
	HS.03	Knowledge of governance	Basic principles of governance, quality assessment, annual report and annual account	2.5	Lectures, self-study, assignments	Business plan
Acquisition of a profound academic development which will enable students to think in terms of philosophy of science	AD.01	The mastery/ability to express in scientific wording orally and in writing	English language, writing scientific English	2.5	Writing exercises	Writing an essay
	AD.02	The mastery/ability to present yourself	Learning how to make posters and well-structured presentations	2.5	Poster sessions, presentations	Presentation

1. Overview of the academic year

Learning outcome	Course	Objective	Content	ECTS	Study method	Examination
Acquisition of a thorough understanding of principles of clinical research which will enable students to perform and/or critically appraise (other) scientific research projects	CR.01	An understanding of the principles of clinical research	Principles of clinical research; what is clinical research, what are the basic starting points of clinical research	2	Lectures, self-study, assignments	Research article
	CR.02	An understanding of study designs	Study designs (diagnostic, prognostic, RCT, observational cohort, case control), biases, validity, reliability	2	Lectures, self-study, assignments, group discussions	Research article
	CR.03	The mastery/ability of evidence-based medicine and decision making	Critical appraisal scientific literature, levels of evidence, clinical guidelines, protocols, literature searches in databases, evidence-based decision making	2	Lectures, self-study, assignments, group discussions	Research article
Acquisition of a thorough understanding and development of management skills and leadership applicable in a complex health care environment	ML.01	An understanding of philosophy of science	Philosophy of science, mind and body, ethics	2	Lectures, debates	Group exercise
	ML.02	Mastery/ability to communicate and act in a team and as a leader	Team roles, leadership, philosophy and history of ageing and medicine, debating skills	2	Site visits, practical exercises, lectures	Group exercise
	ML.03	An understanding of management skills	Business administration and general management skills: finance, marketing, leadership, negotiation, operations, strategy	2	Lectures, practical exercises	Group exercise

2. Course description

Gerontology

GERO.00 The ageing process (2 ECTS)

Coordinator: Prof. Dr. R.G.J. Westendorp MD

Contents:

The combat of diseases that is associated with ageing necessitates a thorough understanding of 'why and how we age'. The first question addresses the notion that the ageing process is not necessary, that ageing is not a prerequisite to life. The world's fauna illustrates that the ageing process has evolved markedly differently between species. This course will bring your understanding of why we age from a negligible to an advanced level. The concept that the rate of ageing varies between individuals stimulates us to explore how to we can slow the ageing process. During the course we will review various patho-physiologic mechanisms. It is needless to say that most of the underlying mechanisms in ageing have not been investigated in sufficient detail. These questions await you to be solved.

Objective(s):

An understanding of theories addressing the ageing process, including evolutionary perspectives in this regard.

Teaching format:

Lectures, working groups, self-study, assignments.

Examination:

N.A.

Learning outcome:

Acquisition of a thorough understanding and analytical insight into ageing theories as part of knowledge in gerontology.

GERO.01 Biological mechanisms of ageing and development (5 ECTS)

Coordinators: Dr. D. van Heemst & Prof. Dr. A. Bartke

Contents:

This course will focus on why and how we age. Students will not only obtain a thorough understanding of biological mechanisms of ageing and development, but will also learn various fundamental evolutionary theories of ageing and will be able to translate these theories into genetic mechanisms and the type of genes that underlie them. Students will become acquainted with the disposable soma theory of Professor Kirkwood, which has largely contributed to the understanding of ageing. In addition, the students will become familiar with the 'free radical theory of ageing' i.e. the various free radicals, their formation and in vivo sources of formation with special emphasis on the mitochondria. Also, the anti-oxidant protection mechanism and repair processes that play a role in the defence against free radical damage will be discussed. After the course the students will be able to describe the various repair mechanisms and can argue that the balance of damage and repair determines the rate of ageing.

Objective(s):

An understanding of the biological determinants and consequences of the ageing process.

Teaching format:

Lectures, working groups, self-study, assignments.

Examination:

Writing a grant proposal.

Learning outcome:

Acquisition of a thorough understanding of current concepts of gerontology and to which extent it will change the future medical care. This course will specifically focus on the biological mechanisms that underlie the process of ageing. Students will acquire the capability to write a grant proposal.

GERO.02 Anthropology of ageing (4 ECTS)

Coordinator: Dr. J. Lindenberg

Contents:

The course focuses on the concepts in anthropology of ageing and related theories in social gerontology. The course will centre on theories of successful ageing in social sciences, and the role of adaptation. Another concept that will be introduced is that of 'ageism': The (implicit) stereotyping and discrimination of people on the basis of age and its effects in social interaction, elderly policy and society at large (e.g. media). In this course the importance of social networks to improved health and longevity will be discussed as well as the role of informal care and social support. During the working groups we will focus on a key issue in social science methodology, namely qualitative interviewing. During the working groups students will be trained in asking open questions, a skill also useful in clinical practice, setting up a thematic interview and coding of interview data. In the examination students will practice these new skills during an interview with an older person. This course will enable students to put their clinical experience and biomedical knowledge in a wider context. This background will give students the ability to approach older people more holistically and with a view on other aspects than just physical aspects of the ageing body alone.

Objective(s):

Knowledge of social scientific insights on ageing and social aspects of ageing.

Teaching format:

Lectures, self-study, assignments, practical assignments, discussion groups.

Examination:

Qualitative interview report.

Learning outcome:

Acquisition of a thorough understanding of current concepts of gerontology and to which extent it will change the future medical care. Students will acquire knowledge about current insights in anthropology, sociology and psychology of ageing and older people. Students will be able to take these insights into account in their future field of practice.

GERO.03 Demography of ageing (3 ECTS)

Coordinator: Dr. D. van Bodegom MD

Contents:

During this course students will acquire a thorough understanding of the demographic aspects of ageing. Students will acquire insight into the differences in patterns of mortality that underlies the epidemiological transition that was first described in 1971 by Abdel Omran, and has been expanded by others. In addition, the students will become familiar with compression of morbidity in public health i.e. a hypothesis put forth by James Fries that the burden of lifetime illness may be compressed into a shorter period before the time

of death, if the age of onset of the first chronic infirmity can be postponed before the age of death. Students will acquire knowledge on the concepts of life expectancy and healthy life expectancy, as well as international differences in life expectancy.

Objective(s):

An understanding of socio-demographic aspects of ageing.

Teaching format:

Lectures, discussion groups, self-study, assignments.

Examination:

Writing an essay and giving a short presentation.

Learning outcome:

Acquisition of a thorough understanding of current concepts of gerontology and to which extent it will change the future medical care. This course will specifically focus on demographic changes and ageing. It will discuss epidemiological methods and research. For the examination students will acquire the capability to write an essay to clarify own opinions and outline this opinion in clear argumentation and evidence.

Geriatrics

GERI.01 Multimorbidity (6 ECTS)

Coordinator: Prof. Dr. R.G.J. Westendorp MD

Contents:

Increasing age often also brings with it a combination of diseases and conditions such as osteoarthritis, heart disease, high blood pressure, dementia and depression. More disorders affecting day-to-day activities such as mobility problems, incontinence and sensory disorders also develop. Nowadays physicians often have to care for patients with several concurrent chronic conditions (multimorbidity or comorbidity). Multimorbidity has a prevalence of 60% among people aged 55 to 74. In this course, students will further deepen their knowledge of multimorbidity and obtain a thorough mastery/ability of the concept, and how this affects medical practice. In follow-up to our focus on multimorbidity geriatric giants will be discussed. These include functional impairments that influence the daily life of the elderly. Examples are problems with psychological functioning (memory impairments, emotional problems), mobility, stability (falls, dizziness), vision, hearing and continence (urine/faeces). Late-life anxiety disorders are considered as a 'geriatric giant,' being twice as prevalent as dementia among older adults, and four to eight times more prevalent than major depressive disorders, causing significant impact on the quality of life, morbidity, and mortality of older adults. This course is designed to teach the students the specific features of medical problems of the geriatric giants in elderly individuals.

Objective(s):

The mastery/ability to think and act in terms of multimorbidity, including concepts such as frailty, complex treatments, and multicausal factors of ageing. In addition, an understanding of 'geriatric giants'.

Teaching format:

Lectures, self-study, assignments.

Examination:

Written exam by case studies of patients.

Learning outcome:

Acquisition of a thorough understanding of the current concepts in geriatrics (e.g. multimorbidity) and how this affects medical practice, the ability to understand and take into account multimorbidity in older people in their medical practice. An understanding and ability to consider multicausal factors in ageing and the implications of this in the treatment of older people.

GERI.02 Vitality and healthy ageing (4 ECTS)

Coordinator: Dr. D. van Bodegom MD

Contents:

Healthy ageing is often focused on medical or biological aspects of the ageing process; disease prevention, maintenance of bodily functions and independence. Vitality also considers the psychological and social aspects and is about the ability to adapt and to reach goals that people consider important themselves. In this course we discuss the implications of the difference between healthy ageing and vitality and discuss the determinants of both. Next, we will discuss who is responsible for healthy ageing and vitality. Several stakeholders will present interventions aimed at promoting healthy ageing or vitality and discuss opportunities and difficulties from their experience.

Objective(s):

Knowledge of vitality.

Teaching format:

Lectures, self-study, assignments.

Examination:

Fundraising letter.

Learning outcome:

Acquisition of a thorough understanding of the current concepts in geriatrics (e.g. multimorbidity) and how this affects medical practice. Students will understand processes of healthy ageing and vitality and will be able to assess the effects on longevity. They can distinguish different lifestyle factors and the influence of different facets (nutrition, exercise) on vitality.

Healthcare structure

HS.01 Structure and financing of healthcare (3 ECTS)

Coordinator: Ir. M.A.E. van der Waal

Contents:

The course 'Structure and financing of health care' has a strong economic as well as a structural perspective. Students will become acquainted with some fundamental aspects of the structures of healthcare and reforms that are taking place in the Netherlands as well as in many other countries.

Students will deal with topics such as: structure of health care systems; different financing models (Beveridge, Bismarck, Semashko, out-of-pocket payments, national health insurance); major players in healthcare and their role and the interrelations between financing of healthcare and the structuring of healthcare. This course will enable students to look at health care systems in an integrated way and helps them understand the complexity of health care arrangements.

Objective(s):

Knowledge of structure and financing of healthcare.

Teaching format:

Lectures, self-study, assignments.

Examination:

Short country-report (policy document) on healthcare structure and financing.

Learning outcome:

Acquisition of a thorough understanding of different aspects of healthcare structure related to patient care in a multidisciplinary setting. Students will acquire knowledge about different healthcare systems, reforms

and the influence of other players on this such as insurers, economic prospects, consumers and the European Union. This will also enable them to discuss and assess health equity and inequality in a critically informed way. With this knowledge the students will be able to understand healthcare structure more in-depth and are able in the future to take more informed action in their own field of practice.

HS.02 Models of care (2.5 ECTS)

Coordinator: Dr. J. Lindenberg

Contents:

Given the increasing incidence of chronic diseases across the world, it has become essential to search for more effective strategies to prevent and manage these diseases. Students will become acquainted with different models of care, such as the chronic care model, integrative care model and preventive care model. Examples, such as the Patient-centred Integrated Care model will be discussed. Students will learn and understand the use of the care models and how they can assist healthcare teams to demonstrate effective, relevant solutions to this growing challenge. Nowadays, medical organizations are under incredibly high pressure in order to manage 'clinical processes' which have grown in complexity and magnitude during the last decades.

Objective(s):

An understanding of models of care.

Teaching format:

Lectures, self-study, assignments.

Examination:

Care network analysis.

Learning outcome:

Acquisition of a thorough understanding of different aspects of healthcare structure related to patient care in a multidisciplinary setting. Students will be able to distinguish different models of care. They will have the capability to critically review the different models and discuss their advantages and disadvantages.

HS.03 Governance (2.5 ECTS)

Coordinators: Dr. D. van Bodegom MD & Drs. H. Rolden

Contents:

Governance is seen as the means by which the issues of quality in care can be addressed. It can be viewed as a comprehensive approach rather than an addition sum of methods and measures. Whilst this course focuses principally on governance matters in the Dutch health service, it also includes case studies from independent Dutch healthcare organisations and from healthcare organisations around the world. Students will become familiar with the meaning of governance, and instruments that help govern: an annual report, an annual account, a supervisory board, the assessment and structuring of quality of care and patient satisfaction/loyalty.

Objective(s):

An understanding of governance.

Teaching format:

Lectures, self-study, assignments.

Examination:

Presentation and written business plan.

Learning outcome:

Acquisition of a thorough understanding of different aspects of healthcare structure related to patient care in a multidisciplinary setting. The students will be able to understand what governance means, they will be able to take into account the knowledge they have acquired about instruments that help govern complex care facilities. In the future, they can integrate this knowledge in their own medical practice.

Academic development

AD.01 Academic writing (2.5 ECTS)

Coordinator: Dr. J. Lindenberg

Contents:

During this course the students will focus on improving their English writing skills. Students will practice several short writing assignments in sub-groups. During feedback sessions students will discuss the best strategies. Students will be more extensively trained in the background and basics of writing scientific English. Scientific papers should be written in a style that is exceedingly clear and concise. Students will become acquainted with different forms of scientific writing and discuss basic outlines. In addition, they will read and discuss the strengths and the weaknesses of several scientific papers. During the course, students will work in sub-groups writing a scientific paper in a standard format frequently used.

Objective(s):

The mastery/ability to express in scientific wording orally and in writing.

Teaching format:

Working groups, writing exercises.

Examination:

This course leads up to final assignments I and II: Writing a scientific essay and research article.

Learning outcome:

Acquisition of a profound academic development in the field of academic writing. Students will be able to write concise, clear and well-structured papers. Simultaneously they will be trained to argue scientifically and outline their arguments on the basis of scientific articles and current insights.

AD.02 Presentation (2.5 ECTS)

Coordinator: Dr. J. Lindenberg

Contents:

During this course we will focus on an important part of communication in science. Students will be practicing presentation skills in the form of posters and verbal presentations. During the course exercises will enable them to enhance their presentation skills and how to effectively convey a message. Students will become acquainted with basic rules to a successful presentation. In addition students will be asked to make poster presentations. Basic guides that help in getting a message across within a limited space will be dealt with. We will touch upon the layout, the format and structure and the use of effective tables, figures and texts on posters. In addition, we will touch upon basic structures of presentation such as the structure of an essay, research article and policy document.

Objective(s):

The mastery/ability to hold effective presentations and diverse forms of communication.

Teaching format:

Working groups.

Examination:

This course leads up to final assignments I, II and III: Writing a scientific essay, research article and group assignment.

Learning outcome:

Acquisition of a profound academic development, in which students show the ability to debate scientifically on the basis of well-reasoned and worked out arguments, this will enable students to present clearly and convincingly.

Clinical research

CR.01 Principles of clinical research (2 ECTS)

Coordinator: Dr. A.J.M. de Craen

Contents:

Clinical epidemiology research is focused on questions of 1) etiology, 2) diagnosis, 3) prognosis and 4) therapy:

1. Clinicians frequently make judgements about whether a medical intervention is harmful for the patient. Students will learn to evaluate evidence about this subject for its validity, importance and direct relevance to patients.
2. With respect to diagnostic studies, students will become familiar with (gold) standard of diagnosis, sensitivity, specificity, positive and negative predictive values. Students will be trained to judge whether the results of a diagnostic study can be regarded as valid and how they can apply a diagnostic test in a patient.
3. Clinicians consider questions about prognosis all the time ("how long have I got?" may be a typical question from a patient). In this course, we will present a framework for appraising the validity, importance, and applicability of evidence about prognosis.
4. Students will become familiar with the gold standard for evaluating questions relating to the efficacy of therapeutic and preventive strategies.

In the course, the principles and practice of clinical epidemiology will be considered and examples from the literature will be worked out and discussed. In addition, the design of occurrence relations for clinical research problems of etiology, diagnosis, prognosis and intervention will be addressed. It also discusses the research methods for this. The course will be based on examples from real life clinical problems and includes a number of exercises.

Objective(s):

An understanding of the principles of clinical research and its research methods.

Teaching format:

Lectures, self-study, assignments, group discussions.

Examination:

These lectures lead up to the writing of a research article.

Learning outcome:

Acquisition of a thorough understanding of principles of clinical research which will enable students to understand and carry out clinical epidemiological research projects.

CR.02 Study designs (2 ECTS)

Coordinator: Dr. A.J.M. de Craen

Contents:

In this course the students will understand the concepts of different study designs including their advantages and disadvantages. Students will learn to distinguish between descriptive and analytic epidemiology as well as prospective and retrospective studies. Also, student will become familiar with several types of epidemiologic observational studies based on e.g. type of sampling, exposure and or disease. Student will learn the advantages and disadvantages of case series and cross sectional studies.

Furthermore, the main principles and practice of cohort (follow-up) and case control studies will be addressed. The course will focus on the classical approach but also addresses modern concepts. The practice of conducting cohort and case-control studies will be discussed with emphasis on issues of validity.

The main objectives of the course are:

- Understanding of the main concepts of study designs in general.
- Ability to design a cohort or case-control study given a research question.
- Ability to discuss research papers with respect to aspects of both internal and external validity.

Objective(s):

An understanding of study designs.

Teaching format:

Lectures, self-study, assignments, group discussions.

Examination:

These lectures lead up to writing of a research article.

Learning outcome:

Acquisition of a thorough understanding of principles of study design which will enable students to perform and/or critically appraise (other) scientific research projects.

CR.03 Evidence-based medicine (2 ECTS)

Coordinator: Dr. A.J.M. de Craen

Contents:

Medical practice is diverse but has some common tasks. One of these is making the best use of available research evidence to diagnose, prevent and treat disease. Keeping up with new research information and incorporating it into clinical decision-making is the task of evidence-based medicine. Students will become acquainted with the basic principles of evidence-based medicine. Students will learn to judge the level of evidence and will enable them to critically appraise scientific literature. Students will focus on three main questions, which run through the course:

- 1) Are the results of this study valid?
- 2) Are the valid results from this study important?
- 3) Are the valid, important results of study applicable to my patient?

Objective(s):

The mastery/ability of evidence-based medicine.

Teaching format:

Lectures, self-study, assignments, group discussions.

Examination:

These courses lead up to writing of a research article.

Learning outcome:

Acquisition of a thorough understanding of principles of evidence-based medicine which will enable students to perform and/or critically appraise (other) scientific research projects.

Management and leadership

ML.01 Philosophy of science (2 ECTS)

Coordinator: Drs. H. Rolden

Contents:

This course will give students a variety of skills and lectures that deepen their knowledge in a wide selection of topics that will enable them to become pioneers of the ageing field. During the course we will focus on several issues in the workplace: leading, being a team member, giving feedback and responding to conflict situations. In addition basic background in science (philosophy, history of medicine) will be discussed during the lectures. In these lectures we will also touch upon basic debating skills and rules as issues will be discussed in debate form.

Objective(s):

Acquiring a wide contextual knowledge of ageing and medicine. The mastery/ability to understand the philosophical background of academic practice. Understanding of the background and the implications of ethical issues that can arise in a hospital setting.

Teaching format:

Lectures and assignments.

Examination:

These lectures lead up to final assignment III: group assignment.

Learning outcome:

Acquisition of a thorough understanding and development of basic background in the philosophy of science. Knowledge and understanding of ethical issues that arise in a hospital setting and when working with elderly.

ML.02 Team roles and leadership (2 ECTS)

Coordinator: Dr. J.J. Meij

Contents:

During this course students will become acquainted with basic models on working in a team and basic theories on leadership. During this course a self-assessment will be made to determine default team role and leadership styles. Through theoretical expansion and practical exercises students will also become acquainted with theories about leadership and successful leadership.

Objective(s):

An understanding of leadership and team role skills.

Teaching format:

Lectures, practical exercises.

Examination:

These lectures lead up to final assignment III: group assignment.

Learning outcome:

Acquisition of a thorough understanding and development of management skills and leadership applicable in a complex health care environment.

ML.03 Business administration (2 ECTS)

Coordinator: Dr. J.J. Meij

Contents:

Students will become familiar with the skills of the health care leader/manager by providing content in finance, policy, technology, quality improvement, economics, marketing and strategic planning. The course provides students with diverse interdisciplinary backgrounds with relevant information related to human services, economic and legal factors. Students learn some basics on how to manage public personnel, the legal and ethical implications of healthcare. The course also includes basic topics like health finance and economics, managed healthcare, clinical and long-term care administration and marketing for healthcare. After this course a one week assessment will take place in which the students have to participate in a group assignment in which they will be given a role and will have to enact a professional collaboration.

Objective(s):

An understanding of management skills.

Teaching format:

Lectures, practical exercises, assignments.

Examination:

These lectures lead up to final assignment III: group assignment.

Learning outcome:

Acquisition of a thorough understanding and development of management skills and leadership applicable in a complex health care environment.

Final examinations

I Scientific essay (trimester 1; 3 ECTS)

During this assignment, students have to write a 'scientific essay' in which they can prove their acquired knowledge and understanding in the field of gerontology substantiated with scientific literature. At the same time, students can practice and show their ability to write an English text in high-level formulations. The students should formulate their personal view and give a well-reasoned opinion on a subject in gerontology substantiated with scientific literature, in a maximum of 5000 words. An essay can be seen as a well-argued view on a certain debate or discussion. An essay should thus be around a debate or a question that as of yet has no clear answer or of which the answer is contentious. It should contain a considerate and convincing argument and the student should formulate a convincing, considerate own position in the debate or in respect to the question outlined.

The students will learn to decide a point they want to make and put it into a text that is clearly written.

The students will be assessed for their ability to:

- Think creatively, reason lucidly and express ideas with clarity.
- Define complex problems and establish the objectives of any document.
- Assess their ideas and recognise their relative importance.
- Structure their reasoning into a coherent and transparent argument.
- Analyse their argument to confirm its effectiveness.

The **format** of the scientific essay should be:

- Introduction including main debate or questions addressed and the reader is invited to read the essay.
- Core text in which the main argument is outlined and structured. It should contain a review of relevant (scientific) literature for the debate/question addressed in the essay (e.g. current debates, viewpoints and arguments) and the author's own position in this debate.
- Conclusion in which a summary is made from the aforementioned and a closure in which a strong view, opinion or possible prospect is given.
- Reference list in which the literature is consistently referred to.

The following points will be used in judging the essays:

- a. Shape and layout (consistency)
- b. Structure of the essay (logic and clear)
- c. Outline of the debate/discussion/issue (relevance, logic, clear and convincing)
- d. Argumentation (consistency, clear, convincing)
- e. Originality (own ideas)
- f. Depth of argument (reference to scientific articles and embedding in scientific debates, logical follow-up of relations and arguments)
- g. Discussion (presentation of own stance, clarity and logic)
- h. Conclusion (logical, originality and clarity)
- i. Complete references and reference list (consistency and clarity)
- j. Language and spelling (consistency and clarity)

Procedure

- During the course 'writing scientific English' a student will submit a proposal for an essay topic with a motivation containing the relevance and interest in the topic chosen (handing in the fourth week, 27 October 2014, to the tutors).
 - The student is appointed one of the core faculty members as a tutor for the essay (in the fifth week) based on the topic chosen.
 - After being appointed a tutor the student hands in a more elaborate structure plan of the essay containing an outline with keywords or key argumentation lines. In agreement with the tutor a deadline is set for the draft version (around the 28 November 2014). The tutor will discuss the outline with the student and gives approval for writing (after possible revisions).
 - A student can ask for an additional tutor for reasons of scientific relevance, e.g. another faculty member or external expert is more familiar with the topic chosen. This person then acts as a second tutor following the procedures as set out in the regulations for the tutor.
 - A student can request consultation in the following weeks in which the student writes the essay. The consultations normally take place on Wednesday afternoons in agreement with the tutor.
 - The student will hand in the essay after the first trimester break on the 2 January 2015.
 - The tutor reviews the essay and another core faculty member will do an independent review of the work. If a second tutor is involved, this second tutor will also review the work.
- The tutor(s) and second core faculty member will all grade the essay, and will motivate their opinion. If grades differ significantly (more than 0.5 point) then a meeting of the members will take place to discuss. If the tutors can not reach an agreement the Board of Examiners is called upon to seek a solution.
 - Note that in case a tutor can not fulfil his/her tasks a replacement tutor must be found among the core academic faculty members. This replacement tutor is found in agreement with the involved student and other faculty members.

The following form will be used by the tutors:

Review form		
Name student: Tutor: Title and date essay:		Student number: Date:
Review criteria	Points awarded	Explanation
Content (7 points) <ul style="list-style-type: none"> - clarity and relevance of the problem/question - embedment of theory, concepts and critical evaluation of these theories and concepts (analysis) - logical exposition of argumentation line and relations - clarity and assessment of literature and review - measure of reflection and own argumentation (convincing and clarity) - thoroughness and creativity of the line of argumentation set forth - clarity and logical follow-up of conclusions and proposed views/future/solutions 		
Shape and layout (2 points) <ul style="list-style-type: none"> - structure and consistency - logical argumentation with stylistically appropriate measures - consistency of references (citations, quotes) and reference-list - language use (style, grammar, spelling) - consistent and clear layout 		
Process (1 point) <ul style="list-style-type: none"> - independence and creativity - pace - deadlines 		

II Research article (trimester 2; 5 ECTS)

In this exercise, students apply their knowledge and understanding of gerontology and geriatrics by writing 'a research article' based on relevant scientific literature or, if available, original data.

Students can do this final assignment in couples if they wish to. Their assessment will be the same unless severe discrepancies in the cooperation occurs.

1. The students should formulate a relevant research question in geriatrics or gerontology. The method of formulating a research question will be discussed in an introductory session. Students should think about short questions and unripe ideas (note on cards) during the whole trimester.
2. Based on preliminary ideas, students should try to find material for further review, through Medline/ PubMed and other scientific databases. Or seek original data on the question they wish to answer with guide of the tutors.
3. From the exploration in various databases, the students should translate their research question into a hypothesis. If working with existing literature, a special session provided by the library of the LUMC will help them formulating a search algorithm.
4. If working with existing literature, based on relevant inclusion and exclusion criteria students should select original research papers (papers including data) that fit those criteria. A flow chart that presents this exclusion and inclusion process should be included in the research paper. If working from original data, conceptual and theoretical relevant framework should be offered in the research article.
5. If working with existing literature, students are expected to list the papers in a table containing

the relevant study characteristics for the research question posed. Following this they will perform a systematic quantitative or qualitative weighing of the studies they found. Students working with original data are expected to give a clear and logic representation of methods and findings.

6. If quantitative, they can apply statistical (multi-variate) regression techniques or otherwise with the help of statistical software. If qualitative, they should for instance consider factors such as study design, population, number of participants, outcome measures and their own criteria to answer the research question (systematic). The data should be summarised in a table or figure that shows what the result is for the research question posed. If working with original data, students should be able to visualize findings in a conducive way and compare these findings to relevant other studies.
7. The following step is to write a concise article of their findings and conclusions substantiated with scientific literature. The article should follow the IMRAD style and should contain at least two tables and a figure.

The article should be concise (maximum 12 pages of text (1.5 line-spaced) including figure or table). With this assignment students can show their understanding of important ageing aspects for the elderly and at the same time demonstrate their understanding of the principals of clinical research and study design.

The **format** of the systematic review should be:

- Abstract that summarizes the content of the paper.
- Introduction that sets the topic and invites the reader to read the article, describes the background of the research and finishes with the student's own research question or hypothesis.

- Methods that includes their own search algorithm, inclusion and exclusion criteria, flow chart of study selection and a summary of the study characteristics in a table in case of an article based on existing literature. If the student is working with original data, the way of collecting and analyzing data should be clearly described in the method section.
- Results that describe the findings. These are summarized in a table or figure that gives an assessment of the results in view of the research question.
- Discussion that describes the interpretation and analysis of the data and conclusions that encompasses their personal interpretation and possible suggestions for future research.

The following points will be used in judging the systematic review:

- a. Shape and layout (consistency)
- b. Structure of the research paper (following IMRAD as much as possible)
- c. Outline of the question or hypothesis at hand (relevance, logic, clear and convincing)
- d. Depth of argument (reference to scientific articles and embedding in scientific debates, logical follow-up of relations and arguments)
- e. Methods (description, if applicable flow chart and table, clarity and following scientific standards for review)
- f. Results (description, tables/figures, assessment)
- g. Discussion (clarity, logic and own input)
- h. Conclusion (logical, originality and clarity)
- i. Complete references and reference list (consistency and clarity)
- j. Language and spelling (consistency and clarity)

Procedure

- a student will submit a proposal for a research topic with a motivation containing the relevance and interest in the topic chosen (9 January 2015 to the coordinators of the Master programme).
- The student is appointed one of the core faculty members as a tutor for the research article (in the seventh week) based on the topic chosen.
- After being appointed a tutor the student hands in a more elaborate structure plan of the article containing an outline with main research question and search algorithm or hypothesis. In agreement with the tutor a deadline is set for the draft version (around the 3 March 2015). The tutor will discuss the outline with the student and gives approval for writing (after possible revisions).
- A student can ask for an additional tutor for reasons of scientific relevance, e.g. another faculty member or external expert is more familiar with the topic chosen. This person then acts as a second tutor following the procedures as set out in the regulations for the tutor.
- A student can request consultation in the following weeks in which the student writes the research paper. The consultations normally take place on Tuesday afternoons in agreement with the tutor.
- The student will hand in the systematic review after the second trimester break on the 3 April 2015 before midnight.
- The tutor reviews the paper and another core faculty member will do an independent review of the work. If a second tutor is involved, this second tutor will also review the work.
- The tutor(s) and second core faculty member will all grade the paper, and will motivate their opinion. If grades differ significantly (more than 0.5 point) then a meeting of the members will take place to discuss. If the tutors can not reach an agreement the Board of Examiners is called upon to seek a solution.
- Note that in case a tutor can not fulfill his/her tasks a replacement tutor must be found among the core academic faculty members. This replacement tutor is found in agreement with the involved student and other faculty members.

Review form

Name student:
Tutor:
Title and date paper:

Student number:

Date:

Review criteria

Points awarded

Explanation

Content (7 points)

- clarity and relevance of the problem/question (research question) and introduction
- embedment and assessment of theory and concepts
- thoroughness and clarity of methods and their description, inclusion exclusion criteria, study selection
- logical exposition of study characteristics and findings (summary table, figures and so on)
- depth of analysis and the ability to assess and critically review the literature in relation to each other (discussion)
- measure of reflection and own argumentation (convincing and clarity, discussion)
- clarity and logical follow-up of conclusions and proposed views/future/solutions (conclusion)

Shape and layout (2 points)

- structure (preferably IMRAD or if diverted from this style with good reason) and consistency
- Tables and figures
- consistency of references (citations, quotes) and reference-list
- language use (style, grammar, spelling)
- consistent and clear layout

Process (1 point)

- independence and creativity
- pace
- deadlines

III Group exercise: hospital simulation (trimester 3; 3 ECTS)

During the third trimester, students can prove their acquired knowledge and understanding of gerontology, geriatrics and healthcare structures by providing their personal input in an interactive exercise of 'hospital simulation'.

Students will apply their understanding of health care structures related to patient care in multidisciplinary settings in a simulated multidisciplinary care cycle. The knowledge and understanding of the three core scientific skills 'academic development', 'clinical research' and thorough understanding of 'management and leadership' provide the students with tools to put their theoretical knowledge into practice. In this respect, students are able to show their understanding of models of care, structure and finance of healthcare and governance and at the same time prove their acquired abilities in management and leadership, and evidence-based decision making.

During this exercise, students will practice certain roles in a simulated multidisciplinary care cycle. Students must employ a variety of communication and critical thinking skills to apply a policy or strategy in managing a hospital. These skills include public speaking, group communication en debating, research, evidence based policy making, active listening, negotiating, conflict resolution, consensus building, note taking, and writing. This exercise is derived from the Model United Nations which is an authentic simulation of the U.N. General Assembly and other multilateral bodies. Students in

other settings have benefited from this interactive learning experience (so-called game simulation, for an example see the United Nations interactive portal <http://cyberschoolbus.un.org/modelun/index.asp>). Former participants of the Leyden Academy executive course, who are health care managers from a variety of organisations, will coach the students during this exercise.

Procedure

The students will divide roles and during the exercise they will receive different challenges and barriers that require them to mobilize the acquired skills and knowledge of the past year. The coaches will evaluate the different students on the basis of:

- participation
- ability to mobilize and integrate acquired skills and knowledge
- ability to cooperate and work together
- creativity and originality
- ability to anticipate challenges and barriers
- active listening
- reporting

Note that since this concerns a group exercise, the assessment will be made on the basis of the group, unless the coaches observe severe inconsistencies in participation or other important facets of the exercise. The coaches can then inform the academic coordinator who can then take further action. If need be the Board of Examiners can be involved in the latter process.

Review form

Group: Name students: Coach: Title and date exercise:		Student number: Date:
Review criteria	Points awarded	Explanation
Process (8 points) <ul style="list-style-type: none">- mobilization of acquired knowledge and skills (to deal with challenges such as models of care)- searching for new information and dealing with new knowledge (creativity, using scientific skills)- cooperation and working together (active listening, leadership roles)- participation (equal division of tasks and workload in consideration of roles)- insight in the problem posed- use of possible aids (reference works and other information)- information and reporting skills- creativity and originality		
Structure and reporting (2 points) <ul style="list-style-type: none">- reporting style (consistency and clarity of notes and writing)- language and style (in writing, usage of appropriate language)- task division- time division		

Leyden Academy on Vitality and Ageing
Poortgebouw LUMC
Rijnsburgerweg 10
2333 AA LEIDEN
The Netherlands

T 071-5420960
F 071-5240969
master@leydenacademy.nl
www.leydenacademy.nl

