Supervisor guide

NIHES research project

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Inhoud

The NIHES master programmes are characterized by a strong emphasis on the research project. Students work on their research project over the course of their programme, culminating in a final research paper that is assessed by multiple assessors. This supervisor guide aims to provide more information about the process of the research project, to help you support and supervise your student in the best way possible. The information is divided into several chapters, in order to make it easier to navigate.

1. NIHES overview

NIHES offers three NVAO-accredited Master of Science-programmes, as well as a Postgraduate Programme which is recognized by Erasmus University Rotterdam, but is not NVAO-accredited. This last programme is aimed at students who want to gain more research experience post-MSc, and increase their chances of qualifying for a PhD position.
The following table shows a quick overview of the programmes offered by NIHES.

	Programme	Duration	EC	Requirements	Majors
MSc in Health Sciences	Full-time or part-time (MSc HS)	1 year (full-time) or longer (part-time)	70	Master's degree, relevant research experience	• Epidemiology • Clinical Epidemiology • Genomic & Molecular Epidemiology • Public Health Epidemiology • Biostatistics • Medical Psychology • Health Decision Sciences & Technology Assessment
Research Master in Health Sciences	Health Sciences (RM HS)	2 years	120	Bachelor's degree, no research / work experience	• Epidemiology • Clinical Epidemiology • Genomic & Molecular Epidemiology • Public Health Epidemiology • Biostatistics • Medical Psychology • Health Decision Sciences & Technology Assessment
	Health Sciences + Medicine	4 years (combined)	120	Medical students Erasmus MC	
Research Master in Clinical Research	Clinical Research (RM CR)	2 years	120	Bachelor's degree, no research / work experience	n/a
	Clinical Research + Medicine	4 years (combined)	120	Medical students Erasmus MC	
Postgraduate Programme		1 year	70	Master's degree, pre-PhD	**Key disciplines** • Epidemiology • Clinical Epidemiology • Genomic & Molecular Epidemiology • Public Health Epidemiology

The three NIHES master programmes have a similar setup. These programmes start with a number of required courses that cover the basics of study design, biostatistics and epidemiology, creating a base for the students' further elective courses and research work. The required courses cover the first semester of the programme, and are concluded with a core competences exam. After this first semester of required courses, students follow a highly personalized programme consisting of elective courses, lifelong learning skills courses, and research work.

The NIHES programmes no longer contain specializations that offer a specific programme with courses that are required for students in that specialization. Rather, the revised curriculum (start 2021 and later) offers majors that are more flexible, based on the topic of a student's research project. These majors are offered in the Master of Science in Health Sciences (70 EC) and the Research Master in Health Sciences (120 EC) programmes. There are no additional required courses for the majors, but each major does have a number of recommended courses that provide the students with the right tools for their specific research. These recommended courses can be found in the Study Guide, available on the NIHES website. Choosing a major is not required.
The Postgraduate Programme has a different setup with only a limited number of required courses and a stronger focus on research work.

2. Research project overview

Students start their research process about halfway through their first Fall semester. They are first invited to a meeting with the associate programme director of their major of interest. In this meeting, the students discuss their research interests, and the associate programme director advises them on a possible supervisor, or for Clinical Research students, on a possible advisor. Following this meeting, it is the responsibility of the student to contact the potential supervisor/advisor to discuss the possibilities for their research project, and come to an agreement about the project. The student is required to inform NIHES once a supervisor has been found. The student can then start working on their research project.

The research project contains different components, depending on the programme the student is in. The following table shows an overview of which components are required for each programme.

	Research Master in Health Sciences (120 EC)	**Research Master in Clinical Research (120 EC)**	**MSc in Health Sciences (70 EC)**	**Postgraduate Programme (70 EC)**
Research proposal	✔	✔	✔	
Midterm presentation	✔	✔	✔	✔
End presentation	✔	✔	✔	
Research paper	✔ (1)	✔ (1)	✔ (1)	✔ (2)
Defence	✔	✔		
Final exam	Medical students Erasmus MC	Medical students Erasmus MC		

The approximate timeline with deadlines for the research project is as follows:

	Research Masters	**MSc 70EC**	**Postgraduate**
Inform NIHES about supervisor	Year 1: November	Year 1: November	Year 1: November
Research proposal + presentation	Year 1: February	Year 1: February	n/a
Midterm presentation	Year 2: January	Year 1: April	Year 1: April
End presentation	Year 2: July	Year 1: July	n/a
Research paper	Year 2: July (incl defence)	Year 1: July	Year 1: July
Final exam (only for medical students)	After Master in Medicine	n/a	n/a

During the first year of their master, students write a research proposal. The objective of this component of the research project is to help students formulate a relevant problem and translate it into a scientific question, formulating objectives and other details necessary to properly organize and complete their research project. The student's research proposal assessment is mainly focused on providing feedback on the following components: objectives;

- study design;
- data collection procedure;
- data analysis procedure;
- time schedule;
- presentation and discussion.

The student's midterm presentation will be assessed by their supervisor on whether the student has made sufficient progress in their research project, and on whether the presentation was sufficient.

The students research project will be assessed by their supervisor on:

- Effort and attitude;
- Execution, result orientation and organization;
- Cooperation.

The students research paper will be assessed by both their supervisor and a 2nd assessor, using a rubric addressing the following components:

- Introduction;
- Methods;
- Results;
- Discussion;
- Structure and writing.

Students are required to add an additional paragraph to their thesis, in which they discuss the integration of the courses they have followed over the course of their programme and their research. The assessment of this paragraph is included in the research paper assessment.

3. Assessment

Although the final product of the research project is the research paper, the different components listed above are also assessed individually. The supervisor is involved in the assessment of each component. The subheadings below list the steps in the assessment for each component, with the steps that include the supervisor highlighted in bold.

Research proposal

During the first year of their master, students write a research proposal. The objective of this component of the research project is to help students formulate a relevant problem and translate it into a scientific question, formulating objectives and other details necessary to properly organize and complete their research project. The research proposal assessment is mainly focused on providing feedback on the following components:

- objectives;
- study design;

- data collection procedure;
- data analysis procedure;
- time schedule;
- presentation and discussion.

The research proposal is assessed as follows:

1. **The student sends their research proposal to the supervisor for approval;**
2. **The student presents their proposal to their supervisor and a representative of their research group.**
3. **Following the presentation, the supervisor and the representative complete the research proposal feedback form (available to the student in Canvas).**
4. The student adjusts their proposal based on the feedback and submits the final version in OSIRIS Case.
5. **The supervisor assesses the integration of the feedback in OSIRIS Case.**
6. Depending on the students programme:
    a. Health Sciences: A second assessor is assigned to the student, who provides additional feedback on the proposal in OSIRIS Case.
    b. Clinical Research: The student's advisor provides additional feedback on the proposal in OSIRIS Case.

Midterm presentation

The aim of the midterm presentation is to ensure the student is still on the right track and that they have made sufficient progress in their research project. The midterm presentation assessment is mainly focused on providing feedback on the following components:

- objectives;
- study design;
- data collection procedure;
- data analysis procedure;
- results so far;
- potential issues;
- student performance during project;
- presentation and discussion.

The midterm presentation is assessed as follows:

1. The student writes a report detailing their progress thus far.
2. **The student presents their research project thus far to the supervisor and a representative of their research group (<u>not</u> their second assessor).**
3. **Following the presentation, the supervisor and the representative complete the midterm presentation feedback form (available to the student in Canvas).**
4. The student submit their progress report, presentation, and feedback form in OSIRIS Case.
5. Depending on the students programme:
    a. Health Sciences: The second assessor assesses the student's progress and provides additional feedback in OSIRIS Case.
    b. Clinical Research: The student's advisor assesses the student's progress and provides additional feedback in OSIRIS Case.

End presentation

The end presentation is assessed as follows:

1. **The student presents their final research to their supervisor and a representative of their research group (and possibly other co-researchers).**
2. **The supervisor is asked to confirm whether the end presentation has taken place when assessing the final research paper and project in OSIRIS Case.** It is therefore required that the end presentation takes place before the student submits their final research paper.

Research paper, project and defence

The research paper, project and (for Research Master students) defence are assessed as follows:

1. The student writes their draft research paper, including an integration paragraph that details the role of the student in the research process, and submits this in OSIRIS Case.
2. **The supervisor is asked to assess the following in OSIRIS Case:**
    a. **Confirm that, to their knowledge, the student is the sole author of the paper;**
    b. **Student's performance during the research project;**
    c. **The submitted research paper;**
    d. **The integration paragraph;**
    e. **If applicable: in the event a significant level of plagiarism is detected, the supervisor is asked to assess these issues.**
3. At the same time, depending on the student's programme:
    a. Health Sciences: The second assessor is asked to assess the submitted research paper and integration paragraph.
    b. Clinical Research: Two members of the Advisory Board are asked to assess the submitted research paper and integration paragraph.

The steps following depend on the programme the student is in.

For students in the Master of Science in Health Sciences programme (70EC):

4. The submitted assessment is sent to one of the Associate Programme Directors for final approval, as they are appointed as examiner for the research project.

For students in the Research Master programmes (120EC):

4. **Following the assessment by the supervisor and second assessor(s), the student's defence session takes place with all assessors present.**
5. **The supervisor assesses the defence in OSIRIS Case.**
6. The second assessor(s) are asked to confirm the defence assessment in OSIRIS Case.
7. All components of the submitted assessment are sent to one of the Associate Programme Directors (Health Sciences) or the student's Advisor (Clinical Research) for final approval, as they are appointed as examiner for the research project.

PLEASE NOTE:

- The defence for Research Master students can only take place if all assessments of the research paper, project and integration paragraph have been submitted in OSIRIS Case, as these assessments should not

be influenced by the defence. If the work is not assessed by 12:00 (midday) the work day before the defence, the defence will be postponed.

- In the event of a significant disagreement between the different assessors on the quality of the research paper (grade difference of 1.1 point or more), the examiner decides on a final grade that lies between the already assigned grades and replaces these grades.

Final exam (medical students only)

The supervisor is not involved in the assessment of the final exam.

Medical students in the research master programmes do not officially complete their research master until after their graduation from their Master in Medicine (MiM). After their MiM graduation, these students are required to complete a final exam – a presentation and discussion with a committee in which they discuss combining the skills and knowledge from both masters.

4. Role of the supervisor

Students work on their research project under the guidance of the personal supervisor assigned to them. All supervisors are senior faculty members at Erasmus MC or Erasmus University Rotterdam with an appointment of at least 0,4 fte at Erasmus MC. Each supervisor has considerable experience (minimally at PhD level) in one or more specific research subjects. Students also work with a junior supervisor, with whom they have contact more frequently and who supervises them more directly on their research project.

After supervisors have been assigned, students can only change supervisors with permission from NIHES.

The primary tasks of the supervisor are:

- to support and supervise the student during the research phase;
- to meet the student at least once every two weeks for at least one hour;
- to arrange for the student: a (shared) desk and computer, usually at the supervisor's own institute or department;
- to arrange that his or her student receives all the necessary computer software, i.e. in addition to the standard software available (see below);
- to keep track of the content of the student's training programme;
- to monitor and report on the student's progress and results in research (the supervisor also receives input from NIHES on the progress of the student at the start of the 2nd semester);
- to give feedback on the research proposal and assess the research proposal;
- to assess the midterm presentation;
- to confirm that the student has presented his/her research paper at the department in question;
- to suggest suitable second assessors for the research paper (only for Health Sciences students);
- to assess the student's research project;
- to assess the student's research paper;
- to sign the research paper;
- to be present at the student's final defence meeting (only for Research Master students);
- to fill in the research assessment form and assign a grade to the research project;
- to evaluate the student's development as a researcher;
- signing off on several aspects of the Personal Education Programme (only for Research Master students, see sub-section below);

- being present at the student's final defence meeting.

Furthermore, the supervisor:
- may share tasks with other (junior) supervisors, with the proviso that, as first supervisor, he or she at all times retains full responsibility;
- should inform NIHES (nihes@erasmusmc.nl) instantly in case of any changes in contact details, e.g. institutional and email addresses;
- should inform NIHES if the student wants to switch supervisors during their research project;
- should inform NIHES in case of problems with the student's progress;
- should confirm his or her presence or the presence of a representative at the graduation ceremony;
- should prepare a student address for the graduation ceremony.

5. Role of the advisor (Clinical Research)

Students in the Research Master in Clinical Research programme are assigned an advisor from the Clinical Research Advisory Board based on their research ambitions. Together with their advisor, they search for a suitable research project and supervisor. The primary tasks of the advisor are:
- to find a supervisor on the basis of the students preferences and possibilities of the research group/department;
- to keep informed about the study progress;
- to agree upon the research proposal and to have regular meetings with student and supervisor about the study progress;
- to be present at the student's midterm presentation;
- to sign for approval on several aspects in the Personal Education Programme (see sub-section below);
- to answer questions and assist the student in solving problems that are not directly connected to the research project and tasks of the supervisor;
- act as examiner for the final assessment of the research project and paper.

Clinical Research students work on their research project under the guidance and supervision of the personal supervisor to whom they are assigned in consultation with their advisor. The tasks of the CR supervisor are the same as those of Health Sciences supervisors mentioned in the section below, with the following additions:
- reporting on the student's research progress to their advisor;
- monitoring and reporting on the student's progress and results together with the advisor.

6. Personal Education Plan (PEP)

This paragraph is only relevant for supervisors of students in the two-year research master programmes.

Every Research Master student is expected to make a Personal Education Programme (PEP): a document in which they plan their personal programme. The PEP covers meetings with their supervisor, planning elective courses, and research seminars, and is concluded by writing a reflection on the student's personal and professional development over the course of their study programme. The student is responsible for organising the meetings according to the PEP, for adding the summaries and for obtaining signatures from their supervisor where necessary.

As part of the PEP, students are required to attend 24 research seminars over the course of their programme. Attended research seminars must be registered in the PEP, by collecting proof of attendance or a signature of the lecturer of the research seminar. If this is not possible, it is also allowed for the supervisor or advisor to sign for a seminar. Students can download the PEP template from the NIHES General Information page in Canvas.

As part of the Personal Education Plan, students are required to write a reflection on their personal and professional development over the course of their programme. This reflection is then discussed with the supervisor, and the supervisor is asked to assess the student's ability to reflect on their development using the rubric included in the PEP.

7. Majors & elective courses

The NIHES masters are highly customizable programmes through both majors and elective courses.
The Research Master in Health Sciences and the Master of Science in Health Sciences programmes allow students to graduate from a number of majors. Contrary to the previously available specializations, the majors do not include any required courses specific to the major, and are solely based on the topic of a student's research project. The major remains somewhat flexible throughout the programme, and is not definite until the student completes their research project and paper. This does not mean that the student can change majors at will, but they do have some flexibility in this. The Health Sciences programmes offer the following majors:

- Biostatistics
- Clinical Epidemiology
- Epidemiology
- Genomic & Molecular Epidemiology
- Health Decision Sciences & Technology Assessment
- Medical Psychology
- Public Health Epidemiology

The student is asked to indicate their preliminary choice of major when submitting their research proposal in OSIRIS Case, and again when submitting their midterm documents. The choice of major is finalized and confirmed by one of the Associate Programme Directors during the assessment process of the final research paper.

NIHES students are able to further customize their programme by choosing elective courses that match their interests and professional needs. Elective courses are scheduled during the winter-spring semester, and during the Erasmus Summer Programme(s) in the month of August. Registration for winter-spring electives takes place during the prior fall semester, registration for elective courses in the ESP opens in spring. Students are free to choose their elective courses, bar any specific prerequisites or scheduling conflicts.
It is also possible for students to complete elective courses at other school or institutes (both within and outside of Erasmus MC), provided that they obtain permission from their supervisor and the examination board and the course is not a skills course. An additional number of requirements for external electives is available to students on the General Information Canvas page they have access to.

8. Publication

It is important for supervisors and their student to discuss their expectations for (co-)publication of the paper at the start of the project, to avoid disputes at a later stage. Guidelines for authorship (among other things) are published in the Erasmus MC Research Code, which can be found on Agora (the Erasmus MC intranet).

If the research paper written by a student leads to a publication, the supervisor needs to make sure to mention the affiliation with NIHES, in the acknowledgements or otherwise.

9. OSIRIS Case

NIHES uses the online tool OSIRIS Case for the research assessment procedure, for all programmes and majors. All assessors (supervisors, second assessors and members of the Clinical Research Advisory Board) have to register their assessment in OSIRIS Case. In order to log into and use this tool, assessors can use their microsection number and password. OSIRIS Case sends out an email when action is required in the research assessment procedure. More information about OSIRIS Case will be send out to all assessors before first use.

Annex I. Schematic programme overview

Master of Science in Health Sciences (70 EC)

<table>
<tr><td colspan="2">August</td><td colspan="6">December</td><td>January</td><td colspan="2">August</td></tr>
<tr><td colspan="7">First semester</td><td colspan="3">Second semester</td></tr>
<tr><td rowspan="2">Review of Mathematics and Introduction to Statistics (1 EC)</td><td rowspan="2">Erasmus Summer Programme (4.2 EC)</td><td rowspan="2">Study Design (4 EC)</td><td rowspan="2">Biostatistics I (4.5 EC)</td><td rowspan="2">Biostatistics II (4.5 EC)</td><td>Clinical Epidemiology (3 EC)</td><td>Public Health Research (3 EC)</td><td>Selected Topics in Epidemiology (3 EC)</td><td>Core competences exam (1 EC)</td><td>Electives (A)
A + B = 10 EC</td><td rowspan="2">Electives Erasmus Summer Programme (B)</td></tr>
<tr><td colspan="3">Selection of supervisor and research project, start preparation research proposal</td><td colspan="3">Research
(28.7 EC)</td></tr>
<tr><td colspan="9">Lifelong Learning Skills (3,1 EC)</td></tr>
</table>

Research Master programmes (120 EC)

Year 1

<table>
<tr><td>Year 1</td><td>August</td><td colspan="6">December</td><td>January</td><td colspan="2">August</td></tr>
<tr><td colspan="7">First semester</td><td colspan="3">Second semester</td></tr>
<tr><td rowspan="2">Review of Mathematics and Introduction to Statistics (1 EC)</td><td rowspan="2">Erasmus Summer Programme (4.2 EC)</td><td rowspan="2">Study Design (4 EC)</td><td rowspan="2">Biostatistics I (4.5 EC)</td><td rowspan="2">Biostatistics II (4.5 EC)</td><td>Clinical Epidemiology (3 EC)</td><td>Public Health Research (3 EC)</td><td>Selected Topics in Epidemiology (3 EC)</td><td>Core competences exam (1 EC)</td><td>Electives (A)
A + B = 10 EC</td><td rowspan="2">Electives Erasmus Summer Programme (B)</td></tr>
<tr><td colspan="3">Selection of supervisor and research project, start preparation research proposal</td><td colspan="3">Research
(30.8 EC)</td></tr>
<tr><td colspan="9">Lifelong Learning Skills, seminars, personal education plan and portfolio (see for EC year 2)</td></tr>
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Year 2

<table>
<tr><td>Year 2 September</td><td colspan="2">December January</td><td>August</td></tr>
<tr><td colspan="2">First semester</td><td colspan="2">Second semester</td></tr>
<tr><td colspan="2" rowspan="2">Research
(35 EC)</td><td>Core competences video (1 EC)</td><td>Electives (C)

C + D = 10 EC</td><td rowspan="2">Electives Erasmus Summer Programme (D)</td></tr>
<tr><td colspan="3">Lifelong Learning Skills, seminars, personal education plan and portfolio (5 EC)</td></tr>
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