Teaching and Examination Regulations
Appendices
Research Master Programs

Health Sciences
Clinical Research
Infection & Immunity
Molecular Medicine
Neuroscience

Academic year 2018-2019

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Teaching and Examinations Rules Team

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1 Introduction, objective and admission

In addition to the general criteria for admission (see the general section of these Education and Examination Regulations) the additional provisions in this appendix also apply for students of the five Research Master programs.

1.1 Objective of the Research Master program

In the Research Master Program students acquire the following skills and knowledge:

- The ability to formulate a relevant problem and translate it into a scientific question.
- The ability to translate a scientific question into a scientific protocol and/or a research proposal.
- The ability to carry out an extensive literature study of an issue.
- Acquisition of adequate knowledge where scientific research and biostatistics analytical methods are concerned, and the ability to apply this knowledge in composing a research proposal and in performing, analyzing and interpreting research.
- Acquisition of adequate knowledge where legislation, regulations and ethical rules are concerned, and the ability to apply this knowledge in composing a research proposal.
- The ability to collaborate with other members of the research group in order to set up and carry out a research project; to collect data and to analyze these data to draw up conclusions.
- The ability to compose a concept manuscript or Master of Science thesis, which, possibly in collaboration with the primary investigator, can be further developed into a scientific manuscript suitable for publication in an international peer-reviewed journal.
- The ability to present the research findings in a scientific meeting.
- The ability to respond to criticism from internal and external evaluators on the Master of Science thesis.
- The ability to critically review and assess relevance of scientific results of others.
- The ability to assess the relevance of basic scientific results for clinical practice, if relevant.
- The ability to translate a clinical research question into an opinion for basic scientific research, if relevant.
- The ability to assess causality.

1.2 Admission requirements per Research Master program

1.2.1 General

For all Research Masters the Admissions and Assessment Committee determines whether a student is admitted to the program. Reasons will be given for the decision not to admit a student on his or her request.

Candidates who meet the selection criteria may be invited by the Admissions Committee for an additional interview (in person or via the internet) and an entrance examination.

Lateral entry admission is possible. This means that students of the Erasmus MC or other institutes can be placed in the second year of the Master of Science program. These students must have successfully completed the first year of another equivalent Research Master, or have

obtained comparable knowledge elsewhere. Requests for exceptions to lateral entry admission should be submitted to the Examination Board by the Program Director. This request must be honored before the student may be admitted.
Candidates must demonstrate that they meet the selection requirements for written and spoken English. International applicants from countries where English is not the official language and who have not had any English-language education at secondary school and university must take a TOEFL or IELTS test. The result of the TOEFL test must be at least 575 (paper based) with partial scores of at least 57, or a score of 232 (computer based) with partial scores of at least 23. The applicant must achieve a minimum score of 90 for the online test with a minimum partial score of 22. The result of the IELTS test must be at least 6.5 with partial scores of at least 6.0. Candidates who have completed their Dutch VWO do not need to take this test.

1.2.2 Health Sciences

Admission to the program is possible for:

- Candidates with a Bachelor degree in a discipline relevant to the health sciences such as medicine, health sciences, (medical) biology, chemistry, pharmacy, human movement sciences, sociology, psychology, nutrition, dentistry and veterinary medicine, or a broad Bachelor's education with sufficient basic subjects in the abovementioned disciplines. In addition, candidates must have affinity with research, as demonstrated by their motivation letter.

1.2.3 Clinical Research

Admission to the program is possible for

- Candidates with a Bachelor degree in medicine, biomedical sciences or medical biology, or a broad bachelor education with sufficient basic subjects in medicine and/or biomedical sciences and/or medical biology.

1.2.4 Infection and Immunity

Admission to the program is only possible for:

- Medical students (from the Netherlands or international students), who have successfully completed their Bachelor.
- Biology, biomedical sciences, biochemistry, veterinary medicine, pharmacy and molecular sciences (LUW) students (from the Netherlands or international students), who have successfully completed their Bachelor.
- HLO-BML (Higher Laboratory Education Biomedical Laboratory Techniques) students who have successfully completed their studies.

The student is definitively admitted after passing the (re-)examination for Summer Course I and the mid-term review of the first lab internship of the Infection and Immunity Research Master program.

1.2.5 Molecular Medicine

Admission to the program is only possible for:

- Candidates with a Bachelor of Science degree in one of the biomedical sciences (such as

biology, biochemistry, biomedical sciences)

- Candidates with a Bachelor of Science degree from a Dutch higher professional program in biomedical laboratory techniques (HBO-BML)

Admission to the program is also possible for medical students who have successfully completed their Bachelor program and who have shown to be interested in biomedical research. As part of bachelor year 3 they can follow a minor that prepares them specifically for the MSc Molecular Medicine curriculum.

For foreign candidates study results already achieved are used in the assessment: they must have a minimum grade point average of 80%.

1.2.6 Neuroscience

Admission to the course is only possible for:

- Candidates with a Bachelor of Science degree in one of the Life Science disciplines
- Candidates with a Bachelor of Science degree in psychology with demonstrable basic knowledge in Life Sciences
- Candidates with a Bachelor of Applied Sciences with a GPA of 8.0 for the entire degree program

In addition, Candidates have passed their admissions examination with 7.0 or more

Access to year 2 of the Neuroscience Research Master program. Achieving the 60 EC points of year 1 gives right of access to the following second year of the Neuroscience Research Master program.

3.1 Admissions and Assessment Committee

1.3.1 Health Sciences.

The Admissions and Assessment Committee of the Research Master program in Health Sciences for external candidates with a different study background than Medicine at the Erasmus MC consists of a program director of a participating department in the Netherlands Institute for Health Sciences (NIHES) and a program coordinator. The Health Sciences and Clinical Research Admissions and Assessment Committee for medical students consists of the Program Directors of the two programs, lecturers who are closely involved with the programs tutors and a program coordinator.

1.3.2 Clinical Research.

The Admissions and Assessment Committee of the Research Master program in Clinical Research for external candidates with a different study background other than Medicine from the Erasmus University consists of a member of the advicecouncil of Clinical Resrach and a program coordinator. The Health Sciences and Clinical Research Admissions and Assessment Committee for medical students consists of the Program Directors of the two programs, lecturers who are closely involved with the programs tutors and a program coordinator.

1.3.3 Infection and Immunity.

The Infection and Immunity Admissions and Assessment Committee consists of the Program Director (or Deputy Program Director), the Scientific Director (or his Deputy) and key lecturers closely involved in the program. The presence of three members and consensus is required for admission to the program.

1.3.4 Molecular Medicine.

The members of the Admissions and Assessment Committee are the board members of the Research Master program, the Program Director, and where applicable a course coordinator. The presence of at least two members and consensus is required for admission to the program.

1.3.5 Neuroscience.

The members of the Admissions and Assessment Committee are the board members of the Research Master program, the Program Director, and where applicable a course coordinator. The presence of at least two members and consensus is required for admission to the program.

1.4 Admission procedure

1.4.1 Health Sciences and Clinical Research

A written selection procedure is applied for external candidates with a different study background than Medicine from the Erasmus University who apply for the Research Master program in Health Sciences. The application forms of these students will be assessed by the Admission and Assessment Committee. All medical students who write an application letter for the MSc Health Sciences or the MSc Clinical Research will be invited for an interview. If there are insufficient places on one of the Health Sciences or Clinical Research Masters suitable candidates will be offered a place on the other Master.

The applicant will receive a written response or email within six weeks with the outcome of his application.

1.4.2 Infection and Immunity

All medical students at the Erasmus MC who write an application letter are invited for an interview. A written selection procedure is first applied for the other candidates who apply for the Research Master program. The application forms of these students will be assessed by the Admissions and Assessment Committee. On this basis, selected students are invited for an interview.

1.4.3 Molecular Medicine

Candidates who meet the selection criteria listed under 1.2 can be invited by the Admissions and Assessment Committee for an additional admission interview (in person or online) and an entrance examination. Admission is decided based on results achieved in previous education, the result obtained in the entrance examination, the references, and the personal motivation of the candidate, as presented in the written motivation and/or the individual admission interview.

The Admissions and Assessment Committee determines whether a student is admitted to the program. The applicant receives a written notification or an email of the outcome of his application within six weeks, unless the entrance exam has not yet been taken at that time.

1.4.4. Neuroscience

Admission is decided based on results achieved in previous education, the result obtained in the entrance examination, the references, and the personal motivation of the candidate, as presented in the written motivation and/or the individual admission interview. The Admissions and Assessment Committee decides whether a student is admitted to the program. Rejection of admission to year 1 of the Neuroscience Research Master program is communicated in writing or by e-mail. At the request of the student, within a week of the result, the rejection is also further explained in a personal conversation and/or in writing. The applicant receives a written notification or an email of the outcome of his application within six weeks, unless the entrance exam has not yet been taken at that time.

2. Assessment

2.1. Interim exams

2.1.1 Health Sciences and Clinical Research

Interim exams are taken during the module or at the end of the block. The study guide and the NIHES website contain information about which subjects interim exams are given. For certain subjects or sections of subjects an attendance obligation applies. In case of an attendance obligation for the entire course, the upper limit for absence is 20%. EC points are only granted if the attendance obligation has been met and a sufficient result has been obtained on the interim exam.

2.1.2 Infection and Immunity

The compulsory courses Summer Course 1 & 2, Winter Course 1 & 2 and Population Dynamics in Infection and Immunity are concluded with a written exam in any case. Admission to the study components after Summer Course 1 is only granted if a pass is obtained for the written examination for Summer Course 1. Students are allowed a maximum of 20% absence. For the whole I&I program applies that absence is allowed only after motivated sign out, and in consultation with the director of the program (in this case the Program Director or managing director). In principle the student is present, the 20% is the upper limit for absence in the event of any non-preventable absence. EC points are only awarded if the obligation to attend has been complied with and a satisfactory result is obtained for the examination if the course has interim exams. The student must be available to attend the compulsory courses and research outside of the timetable free periods in the timetable of the I&I Master program.

2.1.3 Molecular Medicine

All course components of the Molecular Medicine program are tested as explained in the study guide. Attendance is obligatory for a number of subjects. Students are only allowed to be absent for a maximum of 20% after motivated sign-out to the program coordinator and/or the relevant course coordinator. EC points are only awarded if the obligation to attend has been met and a satisfactory mark has been awarded for a test.

2.1.4. Neuroscience

For all course part in the program (i.e. modules, workshops, labtalks and seminars) an attendance obligation applies.Students are only allowed to be absent for a maximum of 20% after motivated sign-out to the program coordinator and/or the relevant course coordinator. EC points are only awarded if the obligation to attend has been met and a satisfactory mark has been awarded for a test.

Progress and assessment in year 1

a. Year 1 consists of various modules, each with a period of approximately 3 weeks, in which periods the various components of the neurosciences are dealt with compactly. Modules are coordinated by a module coordinator. In addition in year 1, a research proposal is prepared and initial experiments are carried out for that purpose, under the direction of the student's research supervisor.
b. The applicable EC points for each module are awarded afterwards if the grade, mathematically rounded off, is at least 5.5 (five point five). A second chance is offered for each module if an insufficient result is achieved.
c. During year 1, the student is expected to be present at weekly work discussions at the department of Neuroscience, and at other scientific meetings and seminars. The EC points for this are awarded by the program director. If a student is insufficiently present at these meetings he will be addressed at least 3 months before the end of year 1 by his research Master coordinator or the Program Director
d. At the end of year 1, the student will submit a written research proposal, and give an oral presentation. An assessment committee, consisting of two research supervisors, at least one of whom is a member of the Admissions and Assessment Committee, will be present at the presentation and may ask the student questions following the presentation. The Assessment Committee decides on the grade for the research proposal and presentation, where the view of the research supervisor is explicitly taken into account. The corresponding EC points are awarded only in case of a sufficient grade.

Progress and assessment in year 2

e. Year 2 of the Neuroscience Research Master program consists of various workshops. Practical skills and research technical components of the neurosciences are taught compactly at these workshops. Workshops are coordinated by a workshop coordinator. In

addition, at the end of year 1, the proposed research is conducted under the supervision student's research supervisor.

f. In the second year at least 10 EC points can be obtained by following workshops. This will be assessed by the various workshop coordinators in accordance with the provisions that also apply for the assessment of the modules in the first year.
g. Substitute education is possible according to the conditions as set out in 4.1.
h. During year 2, the student is expected to be present at general and specialized (work) discussions at the department of Neuroscience indicated by the research supervisor, and at other scientific meetings and seminars. The EC points for these are awarded by the program director. If a student is insufficiently present at these meetings he will be approached by the Master of Scheince coordinator or the program director at least three months before the end of year 2 to discuss how the obligations can be met.

2.2. Resits

2.2.1. Health Sciences and Clinical Research

Each interim exam is subject to a maximum number of attempts of three times. Then the Examination Board has the authority to determine whether the student should stop the program or will be given an extra chance. After the third attempt the student must submit a request for an extra resit to the Examination Board.

For the Research Master in Health Sciences, there are two regular exam times per year: an exam and a re-sit. A third examination opportunity is only organized during the current academic year if at the end of the current academic year the student can and wants to graduate and has already used the other two exam opportunities in that academic year, or can reasonably prove that he was unable to do so.

The procedure for a resit for the scientific research is written down in section 2.2 of the TER.

2.2.2 Infection and Immunity

There is a maximum number of two attempts for each exam. All exams may be retaken, even if a sufficient mark was obtained, after which the highest mark is valild. This can only take place if a re-examination is organized for the students that have earned an insufficient mark. In addition the Examination Boardaminers is authorized to determine whether the student will receive another chance.

2.2.3 Molecular Medicine

Students are entitled to one resit per year, per test

2.2.4 Neuroscience

Students are entitled to one resit per test. However, this does not apply for the final test. This consists of multiple components and should be considered as a portfolio. If the 60 EC points for year 1 and year 2 are not obtained, in individual cases or at the written request of the student, if possible, supported by his research supervisor and due to special circumstances, a resit can be

offered at the discretion of the Examination Board. If a student, even after a possible resit, has not passed the final exam of the first year access to the second year of the program is denied and consequently, he/she is removed from the program. If a student, even after a possible resit, obtains less than 60 EC points credits in the final exam of the second year, he/she is removed from the program.

2.3. Master of Science (MSc) thesis

2.3.1 General

The program is concluded with the defense of a Master of Science (MSc) thesis. The thesis is in the form of a report written by the student alone that in principle can be submitted to a peer-reviewed international journal as a scientific paper. The Master thesis must demonstrate that the student has the skills to collect data and to present results, and has sufficient knowledge to write a scientific article. Students must also respond to comments on the master thesis by internal and external reviewers, as if responding to a peer review in an international peer reviewed journal. Submitting the manuscript for publication is not required, but is an aim. Defense of the MSc thesis consists of oral presentation of the objective, the methods used (or to be used), results and conclusions of the research.

2.3.2 Health Sciences

The master thesis will be evaluated by the research supervisor and an independent evaluator. This final assessment is made by the Program Director. The students must present their thesis to the research group of the department where they did their internship.

2.3.3 Clinical Research

The MSc thesis will be assessed by the research supervisor, at least one member of the Clinical Research Advisory Board and an independent evaluator after the defence. The students must present their thesis to the research group of the department where they did their internship and the Clinical Research symposium.

2.3.4 Infection and Immunity

The master thesis will be assessed by the research supervisor, at least two members of the Admission and Assessment Committee and an external reviewer. Defense of the MSc thesis consists of oral presentation of the objective, the methods used (or to be used), results and conclusions of the research. The final result of the labwork, assessment of the thesis, the presentation and defence will be reported together to the Educational Director and will lead to a final mark.

2.3.5 Molecular Medicine

The Master thesis contains a detailed introduction and ‘Materials and Methods’ section that is more extensive than required for a scientific article. The manuscript of the Master thesis will be

assessed by the research supervisor, an independent assessor and the coordinator of year 2 of the master program. Defense of the MSc thesis consists of an oral presentation of the objective, the results and conclusions of the research. The final result of the evaluation, presentation and defense determine the final grade for the Master of Science thesis.

2.3.6 Neuroscience

The independently written rebuttal of the review of the Master thesis must demonstrate that the student can defend his research, research results and conclusions and/or can assess their value. The review and rebuttal procedure may lead to a revision in the Master thesis. Assessment of the written and oral presentation, the rebuttal and revision of the Master of Science thesis is taking place by an assessment committee as described under 2.1.4 c and d

3 Programs

3.1.1. Health Sciences, 2 years full-time 2018-2019

Research Master in Health Sciences (120 EC points) - start 2018							
Calendar	**Programme**	**EC points* specialisation**					
	COMMON CORE	**EP**	**CE**	**GE**	**PH**	**HEA**	**Medical students Erasmus MC**
Year 1	MCER.ESP01: Principles of Research in Medicine and Epidemiology	0,7	0,7	0,7	0,7	0,7	0,7
Year 1	MCER.CC01-2017: Study Design	4,3	4,3	4,3	4,3	4,3	4,3
Year 1	MCER.CC02: Biostatistical Methods I: Basic Principles	5,7	5,7	5,7	5,7	5,7	5,7
Year 1	MCER.EP03: Biostatistical Methods II: Classical Regression Models	4,3	4,3	4,3	4,3	4,3	4,3
Year 2	MCER.SC07: Scientific Writing in English for Publication	2,0	2,0	2,0	2,0	2,0	2,0
Year 2	MCER.SEM: 24 research seminars	0,8	0,8	0,8	0,8	0,8	0,8
	Common core TOTAL	**17,8**	**17,8**	**17,8**	**17,8**	**17,8**	**17,8**
	REQUIRED						
Year 1	MCER.ESP11: Methods of Public Health Research	0,7	0,7		0,7	0,7	ECTS according to specialisation chosen except for research
Year 1	MCER.ESP14: Clinical Trials		0,7				
Year 1	MCER.ESP25: Health Economics		0,7			0,7	
Year 1	MCER.ESP41: Introduction to Global Public Health	0,7			0,7	0,7	
Year 1	MCER.ESP42: Methods of Health Services Research				0,7		
Year 1	MCER.ESP43: Principles of Genetic Epidemiology			0,7			
Year 1	MCER.ESP45: Primary and Secondary Prevention Research	0,7			0,7		
Year 1	MCER.ESP57: Genomics in Molecular Medicine			1,4			
Year 1	MCER.ESP61: Social Epidemiology	0,7			0,7		
Year 1	MCER.ESP63: Advances in Genomics Research			0,4			
Year 1	MCER.ESP65: The Practice of Epidemiologic Analysis		0,7				
Year 1	MCER.ESP70: Fundamentals of Medical Decision Making	0,7	0,7			0,7	
Year 1	MCER.ESP74: Genome-wide Association Studies			0,7			

Year 1	MCER.ESP75: Human Epigenomics			0,7			
Year 1	MCER.CE01: Clinical Translation of Epidemiology		2,0				
Year 1	MCER.CE02-2017: Clinical Epidemiology		3,7				
Year 1	MCER.GE14: Linux for Scientists			0,6			
Year 1	MCER.GE02-2017: Genetic and Molecular Epidemiology			5,1			
Year 1	MCER.HS02: Public Health Research: part a, b and c				5,7		
Year 1	GW4568M: Economics of Health and Health Care					5,0	
Year 1	GW4546M: HealthTechnology Assessment					5,0	
Year 1	MCER.GE08: SNPs and Human Diseases			1,4			
Year 1	MCER.HS03a-2016: International Comparison of Health Care Systems				1,4		
Year 1	MCER.EP01: Principles in Causal Inference	1,4	1,4				
Year 1	MCER.GE03: Advances in Genome Wide Association Studies			1,4			
Year 1	MCER.GE05: Family Based Genetic Analysis			1,4			
Year 1	MCER.EWP03: Pharmaco-epidemiology and Drug Safety	1,9					ECTS according to specialisation chosen except for research
Year 1	MCER.EWP10: Advanced Topics in Clinical Trials	1,9	1,9				
Year 1	MCER.EWP13: Advanced Analysis of Prognosis Studies	0,9	0,9				
Year 1	MCER.EWP25-2011: Principles of Epidemiologic Data-analysis	0,7					
Year 1	MCER.CE08: Repeated Measurements		1,7				
Year 1	MCER.GE13: An introduction to the Analysis of Next-generation Sequencing Data			1,4			
Year 1	MCER.PU06: Public Health in Low and Middle Income Countries				3,0		
Year 1	MCER.PU03: Site Visit to the Municipal Health Center				0,3		
Year 2	MCER.ESP38: Conceptual Foundation of Epidemiologic Study Design	0,7					
Year 2	MCER.ESP48-2017: Causal Inference	1,4				1,4	
Year 2	MCER.ESP69: Causal Mediation Analysis	1,4					
Year 2	GW4567M: Economics and Financing Health Care Systems					5,0	
Year 2	MCER.PU04: Integration Module				0,3		
Year 2	MCER.RM-RES-2017: Research	75,0	75,0	75,0	75,0	75,0	
Year 2	MCER.RM-RES-MED-2017						75,0
	Required TOTAL	**88,8**	**90,1**	**90,2**	**89,2**	**94,2**	

	ELECTIVES						
	MCER.CE01: Clinical Translation of Epidemiology AND	5,7					ECTS according to specialisation chosen
	MCER.CE02-2017: Clinical Epidemiology						
	OR						
	MCER.HS02: Public Health Research: part a, b and c						
	Two of the following 5 electives:					10,0	
	GW4548M: Advanced Economic Evaluation - 5 ECTS						
	GW4580M: Patient Preferences in the Delivery of Health Care - 5 ECTS						
	GW4582M: Global Health Economics - 5 ECTS						
	GW4587M: Participating in HTA Research (5 ECTS) *limited number of students allowed*						
	GW4575M: Pharmaceutical Pricing and Market Access (PPMH) - 5 ECTS						
	Advanced elective & ESP courses	7,7	12,1	12,0	13,0		
	Electives TOTAL	**13,4**	**12,1**	**12,0**	**13,0**	**10,0**	
	Total ECTS	**120,0**	**120,0**	**120,0**	**120,0**	**122,0**	**120,0**

Specialisations: EP = Epidemiology, CE = Clinical Epidemiology, GE = Genetic and Molecular Epidemiology (previously Genetic Epidemiology), PH = Public Health Epidemiology (previously Public Health), HEA = Health Economic Analysis

*** 1.4 EC points = 1 week**

Year 1 = Aug year 1 until July (Aug-2018 until July-2019)

Year 2 = Aug year 2 (Aug-2019)

3.1.2. Clinical Research, 2 years full-time 2018-2019

Research Master in Clinical Research (120 EC points)- start 2018			
Calendar	**Programme**	**EC points***	
	COMMON CORE	**CR**	**Medical students Erasmus MC**
Year 1	MCER.ESP01: Principles of Research in Medicine and Epidemiology	0,7	0,7
Year 1	MCER.CC01-2017: Study Design	4,3	4,3
Year 1	MCER.CC02: Biostatistical Methods I: Basic Principles	5,7	5,7
Year 1	MCER.EP03: Biostatistical Methods II: Classical Regression Models	4,3	4,3
Year 2	MCER.SC07: Scientific Writing in English for Publication	2,0	2,0
Year 2	MCER.SEM: 24 research seminars	0,8	0,8
	Common core TOTAL	**17,8**	**17,8**
	REQUIRED		
Year 1	MCER.ESP11: Methods of Public Health Research	0,7	0,7
Year 1	MCER.ESP14: Clinical Trials	0,7	0,7
Year 1	MCER.ESP65: The Practice of Epidemiologic Analysis	0,7	0,7
Year 1	MCER.ESP70: Fundamentals of Medical Decision Making	0,7	0,7
Year 1	MCER.ESP76: Value Based Healthcare, from theory to implementation	0,7	0,7
Year 1	MCER.CE01: Clinical Translation of Epidemiology	2,0	2,0
Year 1	MCER.CE02-2017: Clinical Epidemiology	3,7	3,7
Year 1	MCER.EP01: Principles in Causal Inference	1,4	1,4
Year 1	MCER.EWP03: Pharmaco-epidemiology and Drug Safety	1,9	1,9
Year 1	MCER.EWP10: Advanced Topics in Clinical Trials	1,9	1,9
Year 1	MCER.EWP13: Advanced Analysis of Prognosis Studies	0,9	0,9
Year 1	MCER.EWP25-2011: Principles of Epidemiologic Data-analysis	0,7	0,7
Year 2	MCER.RM-RES-2017	75,0	
Year 2	MCER.RM-RES-MED-2017		75,0
	Required TOTAL	**91,0**	**91,0**

	ELECTIVES		
	Advanced elective & ESP courses	11,2	11,2
	Electives TOTAL	**11,2**	**11,2**
	Total ECTS	**120,0**	**120,0**

*** 1.4 EC points = 1 week**

Year 1 = Aug year 1 until July (Aug-2018 until July-2019)

Year 2 = Aug year 2 (Aug-2019)

3.1.3 Infection & Immunity
Research master 2018-2019

	Year 1	**EC points**
	MSCII-101: First Summer Course	7.2
	MSCII-116: Population Dynamics in Infection and Immunity	3.6
	MSCII-115: Biomedical Research Techniques (BRT)	1.5
	MSCII-108: SPSS	1.0
	MSCII-109: Biomedical English writing	2.0
	MSCII-119: PubMed, Endnote and 'Drown or not'	0.6
	MSCII-114: Survival analysis	0.5
	MSCII-104: Visiting research labs. Literature reading and orientation on research programs. Acquisition of specific knowledge of the areas of research	12.0
	MSCII-105: First Winter Course	7.2
	MSCII-E99: Elective courses 1	5.2
	MSCII-118: Performing research in the area of choice. Visiting seminars, journal clubs, research discussions. Literature reading.	19.2
	Total year 1	**60.0**

	Year 2	
	MSCII-201: Second Summer Course	7.2
	MSCII-E99: Elective courses 2	5.8
	MSCII-202: Performing research in the area of choice, stay abroad. Visiting seminars, journal clubs, research discussions. Literature reading.	15.0
	MSCII-203: Second Winter Course	6.0
	MSCII-E99: Elective courses 3	7.0

	MSCII-204: Performing research in area of choice, stay abroad. Visiting seminars, journal clubs, research discussions, literature reading. Writing rebuttal on reviews, writing and presentation MSc thesis.	19.0
	Total year 2	**60.0**
	Total	**120.0**

3.1.4 Molecular Medicine Curriculum 2018 – 2019

Course code	Name	EC points
MM-IW	Introduction Weeks	2.0
MM-DB	Developmental Biology	2.0
	DB - Review Presentation	1.0
MM-MBC-A	Molecular Biology of the Cell – A	5.0
MM-MBC-B	Molecular Biology of the Cell – B	5.0
MM-GEN	Genetics	4.0
MM-CRT-F	Contemporary Research Topics - Faculty sessions	4.0
MM-BOD	Biology of Disease	3.0
MM-RES1	Lab Research Project Year 1	24.0
MM-PS	Presentation Skills	2.0
MM-P1	Research Progress Presentation - YR1	2.0
MM-RW	Report Writing	2.0
	Research Report	4.0
Total Year 1		**60.0**

Course code	Name	EC points
MM-CS	Courses and Seminars	4.0
MM-LR	Literature Review	4.0
MM-PP	Writing a Project Proposal	2.0
MM-P2	Research Progress Presentation - YR2	2.0
MM-RES2	Lab Research Project Year 2	38.0
MM-MSTH	Master of Science thesis	8.0
	Master of Science thesis – Presentation	2.0
Total Year 2		**60.0**

3.1.5 Neuroscience

Samenstelling van het Neuroscience researchmasterprogramma

Het volledige programma wordt aangeboden binnen een periode van twee academisch jaren. Het onderstaande schema bevat een opsomming van de verschillende onderwijsonderdelen per jaar met de daarbij behorende EC punten

MNEU-0.0	2016	Introductionweek	0	EC points
MNEU-1.0-16	2017	Computational Neuroscience	2	EC points
MNEU-1.1-15	2015	Nervous system	3	EC points
MNEU-1.2-15	2015	Neural signaling	3	EC points
MNEU-1.3-15	2015	Sensory system	3	EC points
MNEU-1.4-15	2015	Motor systems	3	EC points
MNEU-1.5-15	2015	Development	3	EC points
MNEU-1.6-15	2015	Neurological disorders	3	EC points
MNEU-1.7-15	2015	Plasticity and behaviour	3	EC points
MNEU-1.8-15	2015	Autonomic nervous and limbic system	3	EC points
MNEU-1.9-15	2015	Cognitive neuroscience	3	EC points
MNEU-1.10-15	2015	Psychiatric disorders	3	EC points
MNEU-1.11-15	2015	Scientific Writing	3	EC points
MNEU-1.12-16	2016	The Scientific Method	1	EC points
MNEU-1.13-17	2017	Preparation research proposal	13	EC points
MNEU-1.14-15	2015	Labtalks and seminars - jaar 1	3	EC points
MNEU-1.15-15	2015	Presentation research proposal	8	EC points
		Assessment research proposal		
		Presentation		
		Total year 1	60	EC points

Cursus	Vanaf jaar	Korte naam	Minimum punten	
MNEU-2.		**Attend workshops of your choice** **Workshops are indicated below**	**10.0**	EC points
MNEU-2.3-16	2015	Neuro histology	1	EC points
MNEU-2.4-15	2015	Eye movements of mice and men	1	EC points
MNEU-2.5-15	2015	Neuro pathology	0	EC points
MNEU-2.6-15	2015	f-MRI analysis techniques	1	EC points
MNEU-2.7-15	2015	Linear systems	2	
MNEU-2.8A-15	2015	Molecular neuro biology/Beginners	1	EC points
MNEU-2.8C-15	2015	Molecular neuro biology/Advanced	1	EC points
MNEU-2.9-15	2015	Neurocognition	1	EC points
MNEU-2.10-15	2015	Genetics and neurological diseases	1	EC points
MNEU-2.11-15	2015	Tools and therapy in psychiatry	1	EC points
MNEU-2.12-15	2015	Hippocampal field recording	1	EC points
MNEU-2.14A-15	2015	Introduction of Matlab/Beginners	1	EC points
MNEU-2.14A-15	2015	Data analysis with Matlab/Advanced	1	EC points
MNEU-2.16-15	2015	Neuro-informatics	1	EC points
MNEU-2.17-15	2015	Introduction to Labview	2	EC points
MNEU-2.18-15	2015	Nerve conduction studies	1	EC points
MNEU-2.20-15	2015	Optical Imaging (Live cell microscopy)	2	EC points

Cursus	Vanaf jaar	Korte naam	Minimum punten	
MNEU-3.13-15	2015	Research project	35	EC points
MNEU-3.14-15	2015	Labtalks and seminars - jaar 2	5	EC points
MNEU-3.15-16	2017	Writing Master of Science thesis *Reseach proposal - 7 EC(70%)* *presentation - 3 EC (30%)*	10	EC points
		Total year 2	60	EC points

3.2 Internships and tutor allocation

3.2.1 Health Sciences and Clinical Research

After admission to the program the Health Sciences students are assigned a tutor. Clinical Research students are allocated an adviser from the Advisory Board for Clinical Research. Together with the student the adviser looks for a research position and tutor. This tutor will supervise the student in his research program.The tutor is preferably a professor or senior researcher. This tutor can delegate the practical supervision to one of his employees, but remains ultimately responsible. In consultation with their tutor and with the Program Directors permission students can do an internship abroad.

3.2.2 Infection and Immunity

The students, if desired, are assigned a tutor after admission to the program. This tutor will supervise the student in his research internship. The tutor is a assistant professor, an associate professor or a full professor. In principle the internships take place within the Erasmus MC. In consultation with their tutor and Program Director, students can follow two internships of six, nine or twelve months totaling eighteen months. The first internship is always at the Erasmus MC to assess the practical skills of the student properly. In consultation with the tutor and the Program Director the second of the two internships may be done in a Dutch institution other than Erasmus MC, or abroad. A (research) internship is only performed outside the Erasmus MC if it is necessary for progress of the research project and/or if it is in the student's interest. The institute where the student is going to should be of comparable scientific quality to the Erasmus MC. There should be sufficient guarantee that during the internship abroad the student can count on intensive support from the research supervisor within the institute where the student follows the internship.

3.2.3 Molecular Medicine

In the first year of the program, a tutor is assigned at the proposal of the student. The Program Director appoints the tutor(s) and ensures that regular meetings can take place between students and tutors during the program.

It is the tutors task to advice the student concerning matters of his MSc and his or her future carrier. The tutor may also function as supervisor for the internship, but this is not obligatory. Internships must be approved by the educational director. An internship abroad is only considered if it is necessary for progress of the research project and/or if it is in the student's interest. The foreign institution where the student is going to should be of comparable scientific quality to the Erasmus MC institutes participating in the Molecular Medicine program. There should be sufficient guarantee that the student can count on intensive supervision by the foreign research supervisor during the internship. An internship abroad will only take place in year 2 of the program, and only when the student is following relevant courses of the Master of Science program.

3.2.4 Neuroscience

After a tutor-student acquaintance period, a student-tutor matching procedure is carried out where the NRMP algorithm is used. The results of this matching procedure form the basis of the tutor assignment. The tutor is appointed by the Program Director (see general provisions). The appointment of the research supervisor will be valid for the entire duration of the course.

4 Education

4.1 Optional and compulsory education

4.1.1 Health Sciences and Clinical Research

For the students the courses as defined in the prospectus are compulsory components of the Research Master program. During the program, the students are also offered a selection of optional courses. Changes can be made to the student's program in consultation with the program coordinator of student affairs and with the approval of the Examination Board.

4.1.2 Infection and Immunity

All modules and workshops in the program are compulsory. Certain modules can be replaced by equivalent education elsewhere in consultation with the tutor and with written approval from the Examination Board.

4.1.3 Molecular Medicine

All course components in the program are compulsory. Applications for exemption from course components are reviewed by the Examination Board if a written request is received from the student

4.1.4 Neuroscience

All modules in the program are compulsory. A minimum of 10 EC points must be obtained for the workshops. Changes can be made to the student's program in consultation with the Admissions and Assessment Committee and with the approval of the Examination Board. If the replacement education is followed with sufficient result then the EC point can be awarded for the workshops that were replaced on presentation of written proof. With regard to workshops followed elsewhere the related EC points count for the required number of EC points for the workshops.

4.2 Exemption

The Examination Board may at the request of a student and after consultation with the Program Director and the relevant examiner waive a part of the program on the basis of knowledge or skills acquired in or outside of higher education

5 Practical information review

5.1 Registering for interim exams

5.1.1 Health Sciences, Clinical Research and Infection and Immunity.

The students are automatically registered for the first round of the interim exams. Students must keep an eye on the resit date for any interim exams and register themselves. The date will be announced via the electronic learning environment or per e-mail.

5.1.2 Molecular Medicine and Neurosciences

The student is automatically registered for the relevant modules of the current academic year. Registering for individual modules and/or tests is not necessary.

5.2 Information about the form of an interim exam

An overview of the subjects that are examined can be found in the study guide and/or the electronic learning environment. The demands for and the form of the interim exam are at the latest on the first day of the course listed on the website, in the electronic learning environment and in Osiris.

5.3 Graduation requirements

5.3.1 Health Sciences and Clinical Research

Students who have completed the full program of 120 EC points obtain the Master of Science in Health Sciences title. The components to be completed are: Earning a satisfactory result for all exam parts or attended/pass if no mark is given

5.3.2 Infection and Immunity

Students who have completed the full program are awarded the Master of Science in Infection & Immunity (research) title. These components are:

- Obtaining a satisfactory result for all interim exams or attended/pass if no mark is given
- Sufficient participation and attendance at research discussions and seminars at the research department.
- Sufficient participation and attendance at the Journal Clubs of the program; demonstrated by signatures on the attendance register;
- An adequate assessment for the research proposal;
- The research phase is concluded with a sufficient result for the Master of Science thesis, the presentation of it at the research department and at the Master of Science I&I Graduation Symposium

5.3.3 Molecular Medicine

Obtaining 120 EC points entitles one to the title Master of Science in Molecular Medicine.

5.3.4 Neuroscience

Obtaining 120 EC points entitles one to the title Master of Science in Neuroscience.