**Bachelor Thesis**

**Maastricht Science Programme**

**Update August 2016**

***Description***

The Bachelor Research Thesis is the final proof-of-capability for Maastricht Science Programme students and will allow them to specialize in an area of their choosing. The thesis period lasts for one complete semester and accounts for 30 ECTS of the degree. In this way, students can experience the entire scientific cycle: starting with a problem, formulation of a scientific question and hypothesis, to experimentation and reporting. The thesis subject will be selected by the student in close collaboration with a research supervisor. In many cases, students can become part of excellent research groups and get involved with ongoing research projects. Notwithstanding, the students will formulate their own research plan in which they will analyze a scientific problem and assess which expertise, infrastructure, and experiments are required to investigate this problem in an efficient manner through research. Furthermore, they will have to analyze their plans and interpret the results in relation to the relevant scientific literature.

Thesis projects can both be carried out under supervision of Maastricht Science Programme staff directly or at other faculties, universities, research institutes or companies in the Netherlands or abroad. Wherever the student chooses to go, the topic of the thesis should be scientific and requires approval. Ideally, thesis projects will have a strong interdisciplinary character, to match the skills and interests of the Maastricht Science Programme students. The thesis research is completed with presentations in the form of a mini symposium and by the submission of the thesis.

***Aims***

* To give students an opportunity to individually perform high-level academic research
* To gather independent research skills while working in a research team
* To gain insight in the process of scientific research
* To understand how to write a research proposal
* To write and defend a research thesis
* To further specialize in one or more areas of the natural sciences
* To prepare for admission to (research) masters in the natural sciences

***Coordination***

The bachelor thesis coordinator will oversee the selection process and the administrative issues involved. In addition, each thesis project is assigned an internal Maastricht Science Programme advisor. This internal advisor verifies that the scientific level of the proposed experiments, the actual research and the final outcomes are of sufficient academic quality. During the thesis research a personal time-table will be made for the students with set moments for reflection and feedback.

At this moment, John Sloggett will acts as bachelor thesis coordinator. Please feel free to stop by with your questions. Forms, questions and other e-mails should be submitted to the bachelor thesis office ([msc-btr@maastrichtuniversity.nl](mailto:msc-btr@maastrichtuniversity.nl)), which will take responsibility for the coordination and all administrative arrangements surrounding the bachelor thesis process.

Digital information on the bachelor thesis can be found on Eleum. There are two relevant locations. General information and suggestions for possible topics are visible for all Maastricht Science Programme students in the “MSC Students” section on Eleum. Once you are close to starting your thesis, you will also be enrolled in an Eleum course for the bachelor thesis. This course will contain more specific details on requirements, grading, timetable, important deadlines and relevant forms.

***Who is who and who does what***

* Bachelor thesis coordinator: coordinates the bachelor thesis period and monitors the contacts and ongoing projects. He/she also keeps track of the whereabouts of the students and the different points of assessment.
* Research supervisor: the day-to-day supervisor of the thesis research project. This can be a Maastricht Science Programme staff member or an external scientist. In case research is performed within the Maastricht Science Programme, the research supervisor will also act as the internal thesis advisor and a second scientist is called in to aid in the assessment of the research proposal and the written thesis.
* Internal thesis advisor: Maastricht Science Programme staff member that is partially responsible for grading the research thesis proposal, final written thesis and defense. Please note that they are not supervisors, but their role is limited to providing feedback, where necessary, and assisting in the grading for quality control measures. In general, he/she has some affinity with the research project. However, this may not always be possible.
* Student: the student performing the bachelor thesis and is during the thesis semester full-time committed to the bachelor thesis project.

***Eligibility***

All students with at least 145 ECTS can start with their bachelor thesis research. The regular moment to start thesis projects is at the beginning of the semester, *i.e.* the beginning of periods 1 and 4. For these starting moments an academic calendar will be published containing the relevant dates and deadlines. In certain cases the bachelor thesis can also be started at the beginning of periods 2 and 5. However, this is pending prior approval and depending on the availability of suitable research thesis locations to accommodate the student for the duration of the thesis research. In very special cases, a student may request to take up to a maximum of 5 ECTS of modules during the bachelor thesis period. Such modules would constitute additional credit and as such require prior permission from the examination committee. In addition, a written statement from the research supervisor and Bachelor thesis coordinator will be required stating that they approve this additional education.

***Calendar Bachelor Thesis – Students beginning Period 1 of the academic year 2015-2016 (tentative dates are subject to change)***

Currently ongoing: Orientation on thesis topics

July 25, 2016: Thesis subject due date

August 2016: Approval of thesis subjects; contact with external supervisors

**September5, 2016: Start bachelor thesis research**

September 2016: Assignment of internal thesis advisor

**October 7, 2016: Deadline submission bachelor thesis research proposal [at 23:59]**

October 2016: Feedback on research proposal and first progress meeting with internal thesis advisor

November 2016: Second progress meeting with internal thesis advisor

December 23, 2016: Final title of thesis due date

**January 9, 2016: Bachelor thesis due date**

January 19 or 20, 2017: Thesis defense / mini-symposium

February 3, 2017: Graduation

***Topic Selection***

There are two ways you can select a suitable topic for your bachelor thesis. The first method is the most straightforward. There is on Eleum a listing of possible bachelor thesis research areas of interest. These are topics supplied by the Maastricht Science Programme staff, teaching staff from other faculties in the program and some topics at other universities, institutions and companies in the region. This will give you the opportunity to discuss these topics and areas of interest with the various research supervisors. Although the thesis supervisor may not yet be able to guarantee individual choices, a good match will aid in the selection process. During this consultation phase, students can also have a final meeting with their academic advisor, who may be able to guide them in the selection process. Once you submit your choice using the Maastricht Science Program Bachelor Research Thesis information sheet (available on Eleum), the bachelor thesis coordinator will confirm this choice as soon as possible.

Alternatively, if you do not want to select from predefined subject areas, or if you want to go to another institution or business, possibly abroad, you will be responsible yourself for finding a suitable research laboratory. Obviously, we can try to help you with this, as far as we have connections in various places. Once you have contact to a research lab, you will have to submit the same Maastricht Science Program Bachelor Research Thesis information sheet (available on Eleum). As requested in the form, write a clear short research proposal (0.5 A4), so that the bachelor thesis coordinator can confirm the suitability and natural scientific character of the proposed research. You will also need to document that you have been in contact with the research supervisor and have tentative approval to do a bachelor thesis in his/her research group. You will have to submit these documents no later than the deadline indicated in the relevant calendar. After that we will contact the external research supervisor and make sure that all responsibilities and procedures are clearly known by all parties.

It is important to realize that it is not allowed to receive financial compensation for your bachelor thesis research, the only exception being reimbursement of expenses. In addition, no compensation will be given to external receiving research groups. Research groups within Maastricht University will receive a minimal amount of teaching hours for their educational efforts, but these hours will not cover the hours which will be needed to supervise and assess the bachelor thesis. However, we are confident that the students will be of considerable help for the research efforts of the groups, supplying their skills, knowledge and enthusiasm at no additional cost.

***Quality Control and Assessment***

The bachelor thesis is a single 30 EC module. Four different components will be graded (the weight of each part is indicated between brackets):

1. Research proposal and description of relevant literature (5 EC)
2. Practical part: execution of the proposed research (15 EC)
3. Written thesis (7 EC)
4. Presentation and defense (3 EC)

The final grade is calculated according to the individual EC weights of these four parts and a lower grade for one part can be compensated by a higher grade for another part.

The bachelor thesis will be assessed by staff members of the Maastricht Science Programme and the research supervisor. For the different parts of the thesis, the same group of staff/supervisors will be responsible for the grading, only with slightly different responsibilities for the different parts of the thesis:

1. Research proposal: the research supervisor and the internal thesis advisor
2. Practical execution of the research: the research supervisor
3. Written thesis: the research supervisor and the internal thesis advisor.
4. Presentation and defense: a jury composed of internal thesis advisors, external supervisors and other Maastricht Science Programme staff members.

More details on these parts can be found below.

Research proposal

The research proposal should be between 1500 and 2000 words and should be accompanied by a summary of the relevant literature with at least 15 relevant peer-reviewed references. This summary should explain the importance of the proposed research and the current state of research in the scientific area. The proposal will be approved and graded after submission by the research supervisor and the internal thesis advisor, with their assessments having equal weight in the calculation of the grade. The assessment of the proposal will be performed using a standardized grading sheet, to ensure fair and consistent grading. Students are allowed to start with the practical work during the time needed for the writing and the assessment of this proposal. This is necessary because the over-all time available for the bachelor thesis is limited. Detailed instructions will be provided on Eleum. The proposal will account for 5 EC.

Practical execution of the research

The practical execution is under supervision of the responsible research supervisor. At least one, but preferably two visits by the internal thesis advisor should take place, preferably about half-way through the research project. If possible, the internal thesis advisor should discuss the progress of the project separately with the student and supervisor, to ensure that there are no significant conflicts between the two parties. For students who do their thesis abroad or overseas, an alternative way of communication for this moment of mid-term evaluation should be chosen. The assessment of this practical part of the bachelor thesis will be performed using two standardized grading sheets. A first short grading sheet will be supplied to the research supervisor at two months after the start of the bachelor thesis. After consultation with the internal advisor, a first practical execution grade will be awarded. The weight of this grade will be 5 EC. In this way students receive the first feedback on their performance at a moment they still can improve. The second grading sheet will be supplied to the research supervisor towards the end of the research period. The weight of this grade will be 10 EC. The two grades combined will account for 15 EC.

Written thesis

The written bachelor thesis will be graded by the research supervisor and the internal thesis advisor, with their assessments having equal weight in the calculation of the thesis grade. The assessment of the thesis will be performed using a standardized grading sheet. When the assessment by the research supervisor and the internal thesis advisor are markedly different, the final decision on the thesis grade is with the staff of the Maastricht Science Programme. The thesis will account for 7 EC.

Presentation and defense

The presentation and defense of the thesis results will take place during a bachelor thesis symposium. The presentation and defense will be graded by a jury. This jury will consist of at least three Maastricht Science Programme staff members, who may be joined by external supervisors and other academic staff members. Finally, also the assessment of the presentation and defense will be performed using a standardized grading sheet. The presentation and defense will account for 3 EC.

***Bachelor thesis abroad***

The bachelor thesis provides an excellent opportunity to do part of your study abroad. Since all credits are awarded by Maastricht University, finding a thesis location abroad may not be very difficult. Often you will be treated as a “visiting scientist” at the receiving institution. Please be aware that planning a bachelor thesis abroad requires quite a bit more work than a thesis in the Netherlands. Hence, the deadlines in the provided calendars will not apply when going abroad and you should contact us as early as possible. To be able to go abroad for your thesis you have to meet certain criteria. First of all, a GPA of 7.5 is required to go abroad at the Maastricht Science Programme. Generally also a thesis start at the beginning of a semester is required. Finally, your bachelor thesis subject as well as the receiving institution have to be specifically approved.

When going abroad, it is important to realize that, especially when travelling outside the EU, sometimes visa paperwork has to be done, which will take time, money and attention. You may also be required to take out special insurance. Additional costs of travel, visa, insurance and housing when going abroad will be at your own expense and not covered by the Maastricht Science Programme, unless you are awarded an Erasmus grant, which may cover some costs.

Erasmus + is a European education programme from the European Commission for Mobility of Higher Education in Europe and is aimed at supporting European activities of higher education institutions and promoting mobility and exchange of students, lecturers and staff. Students participating in the Erasmus exchange programme can receive an Erasmus grant. When you do your bachelor thesis research abroad, within Europe, you can apply for an Erasmus grant. The height of the grant depends on the country you are going to, the amount is set by the European Commission so this is not debatable. There is a limited amount of money available, so there will be a selection procedure using the following criteria:

1. Grade Point Average (GPA)
2. Country of destination: Belgium and Germany have the least priority

There are specific rules within Erasmus+ that will limit your ability to get a scholarship:

1. Going to your home country
2. European institutions <http://europa.eu/institutions/inst/index_en.htm>;
3. Organizations that control EU-programmes, such as National Agencies (this is to prevent possible conflict of interests or double financing)
4. If you have received an Erasmus grant as a bachelor student before, please contact us.

You can apply for an Erasmus grant by filling out the Erasmus grant application form (available on Eleum).

***Disclaimer***

***Please note that all information in this document is tentative and subject to change. Since we are still in the process of optimizing the bachelor thesis module, the provided information may be adjusted in the coming months. The guidelines that will be in place at the exact moment of the actual start of your thesis research will determine the procedures, rules, grading and time planning applying to your bachelor thesis research.***