Graduation Manual

Master Geomatics

Academic year 2023–2024

TU Delft

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Introduction

This manual is based on the official regulations of the graduation process for students in the Master Geomatics of the Faculty of Architecture and the Built Environment, and is meant for students, mentors, co-readers, delegates of the Board of Examiners and others who are involved in the graduation process. This manual contains important information about the structure and regulations of the graduation process.

This manual is part of the official regulations and is provided at the start of the semester to all students who enrolled for GEO2011.

Section 1 provides a scheme of the setup of the evaluations and a scheme explaining the responsibilities of everyone involved per evaluation.

Section 2 contains information about the quorum and the appraisal

Section 3 provides information on the 'cum laude' and 'honourable mention' regulations.

The appendices contain more detailed information on several aspects, details on the subjects to be assessed, graduation plan, reflection requirements, an example of a graduation contract and the references to official regulations which this manual is part of.

A digital graduation registration is used. All involved teachers have access to the information in the SharePoint application that is used for this registration. The registration includes personal information of the student, the composition of the mentor team, registration for the P2 and P5 and the registration of all assessments. Each semester Education and Student Affairs adds the names of the new enrolled GEO2011 students to this digital registration.

The involved coordinators, mentors and delegates of the board of examiners can add additional information and notes to the file of each student. For all graduates, the first mentor is responsible for completing the digital assessment registration.

1.0 Graduation process

1.1 Admission

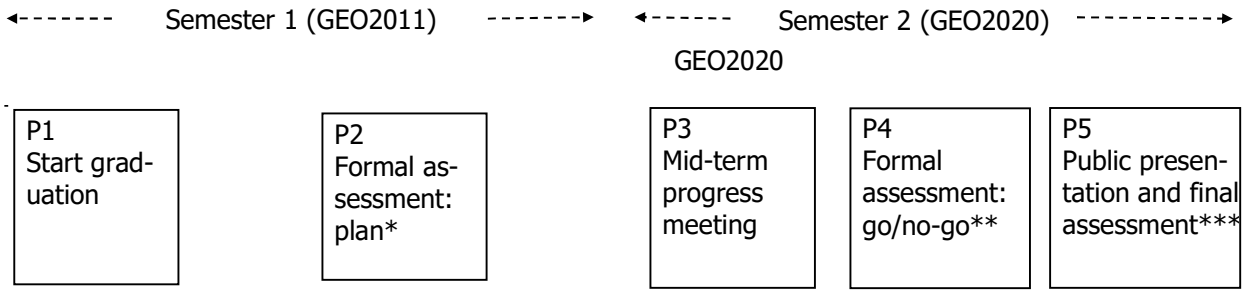
Students who enter the graduation programme should have completed at least nine of the ten 5 EC core courses. You start the graduation programme with registration (P1).

1.2 Evaluations

During three formal assessments (P2, P4 and P5) your mentors will evaluate your progress in the presence of a delegate of the Board of Examiners. The evaluations take place within the assigned periods, indicated in the academic graduation calendar. The P2, P4 and P5 have to take place within the venue of the Faculty of Architecture and the Built Environment, or will be held online if it is not allowed to meet on campus.

Time Schedule		
What	When	Responsible
P1: Registration of topics/mentors - *Product: topic, mentors, summary of problem to solve and objectives*	9-10 weeks after official start semester	*Graduation Coordinator*
Submit final graduation plan to both mentors and the delegate of the Board of Examiners	*1 week before P2*	*Student*
P2: Graduation plan (formal assessment) - *Presentation: 15 minutes* - *Questions : 15 minutes* - *Closed Appraisal: 15 minutes* - *Committee informs student about result assessment: passed, failed, or retake*	9-10 weeks after P1	*Graduation Coordinator*
P3: Midterm progress meeting - *Free-form, to be decided by mentors and student*	~7-8 weeks after P2	*First Mentor*
Submit draft thesis to both mentors, the co-reader, and delegate of the Board of Examiners	*1 week before P4*	*Student*
P4: Go/no-go (formal assessment) - *Assessment meeting with mentors, student, and delegate of Board of Examiners* - *45 minute meeting where decision is made whether student can defend within 1 month* - *Student is informed about result assessment: go, or no-go*	~7-8 weeks after P3	*Student, First Mentor*

What	When	Responsible
Submit final thesis to both mentors, the co-reader, and the delegate of the Board of Examiners	*1 week before P5*	*Student*
P5: Public presentation and final assessment (formal assessment) - *Public presentation: 30 minutes* - *Questions: 15 minutes* - *Closed appraisal: 15 minutes* - *Result and graduation ceremony: 15 minutes*	4-5 weeks after P4	*Student, First Mentor*



* P2: Formal assessment of the Graduation Plan, admission to GEO2020.
** P4: Formal assessment of draft thesis.
*** P5: Formal assessment of final thesis and presentation.

Overview core courses (Master 1 and 2)

Course code	**EC**	**Title**
GEO1000	5	Python Programming for Geomatics
GEO1001	5	Sensing Technologies
GEO1002	5	Geographical Information Systems (GIS) and Cartography
GEO1003	5	Positioning and Location Awareness
GEO1006	5	Geo Database Management Systems
GEO1015	5	Digital Terrain Modelling
GEO1004	5	3D Modelling of the Built Environment
GEO1007	5	Geoweb Technology
GEO1009	5	Geo-information Governance
GEO1016	5	Photogrammetry and 3D Computer Vision

1.3 Mentors and graduation team

First Mentor (Daily mentor)
The first mentor is a scientific staff member of one of the groups involved in the MSc Geomatics programme.
They are responsible for the overall graduation project and are an expert in the field of the graduation project. They are involved in all evaluations and take care of the registration of all assessments in Sharepoint (the registration system).

Second mentor
The second mentor is a scientific staff member of the TU Delft whose expertise complements that of the first mentor. If the first mentor does not hold a PhD, then it is mandatory that the second mentor holds one. The second mentor must participate in P2, P4 and P5.

Co-reader
The co-reader is a scientific staff member of the TU Delft or employee of another university, who is an expert in the field of the graduation project. Their first task is to assess the quality of the student's work in an unbiased way. The co-reader contributes to the final mark given to the student (at P5), and can help improve the final thesis by providing feedback at the P4. Preferably, they are not part of the same group(s) as the first and second mentors belong to. The co-reader is chosen by the mentors in collaboration with the student.

Delegate of the Board of Examiners (BE)
The delegate of Board of Examiners participates as chairperson during the P2, P4 and P5, and is appointed by the Board of Examiners after admission to the P2.

1.4 Detailed scheme per evaluation

Evaluation 1 P1- Progress review Graduation plan

Goal	Ensure that the student has picked a topic, two mentors, and has an overview of what will need to be carried out.
Structure	Registration of necessary text in the system of GEO2020 website.

P1 responsibilities		
Part	**Action**	**Responsible**
Task	Setup the system to register the topics and summaries	Graduation coordinator
	Register asked information before the deadline	Student

Evaluation 2 P2 – Formal assessment: Graduation plan

Goal	The P2 assessment is essential to get admission to GEO2020. Mentors assess whether the student can graduate with the topic within 6 months.
Where	Reserved room by Scheduling BK or online meeting if no activities at BK allowed.
When	During the fixed weeks according to the academic graduation calendar.
Admission conditions	The admission to the P2 evaluation is only possible if the student has obtained: • 45 EC from the core program (first year, see page 5) and the second year course GEO1101 (Synthesis project) • or 45 EC from the core program (first year, see page 5) and the course TUD4040 (JIP).
Structure	For the student 15 minutes preparation is scheduled, followed by: 15 minutes presentation; 15 minutes questions; 15 minutes for appraisal and communicating the result to the student.
Quorum	First and second mentors Delegate of the Board of Examiners
Chairperson	Delegate of the Board of Examiners
Assessors (all required)	First and second mentor
Subjects of assessment	Research, Presentation, and Process (see Appendix 1)
Method of assessment	Assessment is based on the P2 assessment criteria. The mentors give the student a good (+), sufficient (0) or negative (-) indication per aspect; the first 2 are a "pass", the last one a "fail". The mentors give the student a final conclusion: passed, failed, or retake.
Method of assessment registration	The assessment and the result are registered in the P2 assessment form in Sharepoint by the first mentor.
Consequence of assessment	Result "Passed" means the student is able to finish the graduation project within 6 months and is registered for GEO2020. The result "Passed" is an interim examination result with a validity of one year. The Board of examiners can decide to extend this validity upon request form the student and/or supervisors. Result "Failed" means the student does the P2 again, in the next P2 period at the earliest (new registration required). Result "Retake" means the student does again P2 within four weeks.
Retake	In case of a "Retake" the assessors are convinced that a realistic chance exists the student will be able to pass in 4 weeks. Specific improvement points are described in the assessment form. The first mentor and the delegate of the Board of Examiners must agree on a date and time for the retake with the student. If the mentors and delegate are not satisfied with the results after the retake, a "Failed" is given. Under special circumstances an extra P2 moment can be set-up with the agreement of supervisors and the MSc thesis coordinator.

P2 responsibilities		
Part	**Action**	**Responsible**
Preparation	Schedule day and time and inform student, first mentor and second mentor.	Graduation coordinator
	Register P2 request in Sharepoint.	Graduation coordinator
	Register second mentor. One month before P2 at the latest.	Graduation coordinator
	Check whether student meets the admission requirements and register in Sharepoint.	Student Administration (SPA-BK)
	Inform student by E-mail on result admission assessment.	Board of Examiners
	Allocate delegate of the Board of Examiners and register in Sharepoint.	Secretary Education and Student Affairs (authorized by the board of examiners)
	Write a Graduation Plan (use template, see Appendix 2).	Student
	Schedule P2 for admitted students; scheduled presentations will be part of the course BK-P2 and also the individual Staff Members timetables on My Timetable	Scheduling department
	Hand in the graduation plan to the mentors and to the Secretariat of the Board of Examiners (Examencommissie-BK@tudelft.nl) at least one week before P2.	Student
	Read and assess the graduation plan.	Mentors and Delegate of the Board of Examiners
	15 minutes before session, ensure computer and slides are working.	Student
At the evaluation	Chairperson.	Delegate of the Board of Examiners
	Present graduation plan, draft research results and draft of graduation project.	Student (See appendix 1 and 2 for exact products for this evaluation)
	Ask questions.	Both mentors
	Evaluate academic level of student's presentation and the answers to the mentors' questions.	Both mentors
At the closed appraisal	Act as chairperson	Delegate of the Board of Examiners
	Determine final decision	All mentors
	Document the assessment and conclusion on the P2 Assessment form in SharePoint	First mentor

P2 responsibilities		
Part	**Action**	**Responsible**
Completion	Inform the student of final decision. Make arrangements for retake if applicable.	First mentor
	Complete assessment form with own notes within two workings days	Second mentor and Delegate of the Board of Examiners.
	Check P2 assessment form on completeness and send it to the student by E-mail, using the button on the Assessment form within five workings days.	First mentor
	Check whether forms are all present and filled in correctly. Undertake action if items are missing; register completion.	Education and Student Affairs
	Register P2 completion date in Osiris.	Student Administration (SPA-BK)

Evaluation 3 P3 – Progress meeting

Goal	Determine whether the student's progress indicates they should be able to meet on time the requirements for the P4.
Where	Reserved room by first mentor or online if meetings at BK are not allowed due to Covid 19 measures.
Structure	Meeting
Assessors	First mentor, and second mentor is optional.
Subjects of assessment	Research, Presentation and Process (see Appendix 1).
Method of assessment	The first mentor gives the student a positive or negative indication concerning their progress.
Method of assessment registration	The assessment and conclusions are documented on the P3 assessment form in Sharepoint by the first mentor.
Consequence of assessment	This is not a formal assessment, it is used as an indicator for the student to know if they are on track. Regardless of the outcome of the assessment, the student proceeds. If necessary, the first mentor advises the student about possible improvements.

P3 responsibilities		
Part	**Action**	**Responsible**
Preparation	Schedule day, time and location and inform student and second mentor.	First mentor
	Register scheduled date in digital graduation registration.	First mentor
At the meeting	Give feedback on students' progress by first mentor and ask for specific feedback by student.	First mentor, student
Completion	Fill in the P3 assessment form (Sharepoint). Determine conclusion: On schedule or Not on schedule.	First mentor
	Inform the student of assessment; advice on progress.	First mentor
	Send the digital assessment form to the student, within 2 days after P3. Register P4 date, preferred time (morning, afternoon, evening) in the Student Progress Overview in the Graduation Registration (Sharepoint).	First mentor
	Before registering the P4 date check availability of second mentor and delegate Board of Examiners.	First mentor

Evaluation 4 P4 - Go/no-go (formal assessment)

Goal	Determine whether the content of the research meets the requirements to admit the student to the final public presentation (P5).
Where	Reserved room by Scheduling BK or online if this activity at BK is not allowed.
When	During fixed weeks according to the academic graduation calendar.
Admission requirements	Student has obtained all educational components of the Master Geomatics programme with exception from GEO2020 before the final registration date for the P4 presentation. *The student has also participated in and passed the GEO2011 course. Because this course is part of the complete graduation phase the result will be registered after completing the graduation at the P5.*
Structure	Meeting with mentors and student, delegate is present to chair the meeting. The co-reader does deliver feedback on the report before the P4 to the main mentor who can bring this forward in the meeting with the student. If the student has agreed on beforehand with the first mentor a presentation of 10 minutes is allowed. • 30 minutes discussion with and asking questions to the student by the mentors on the draft thesis; • 15 minutes closed appraisal by committee and committee informs student on the result: GO / No-go.
Quorum	First mentor Second mentor Delegate of the Board of Examiners
Chairperson	Delegate of the Board of Examiners.
Assessors	First mentor Second mentor
Subjects of assessment	Research, Presentation, Process and Project (see Appendix 1 and 5).
Method of assessment	Assessment is based on the P4 assessment criteria The mentors give the student a good (+), sufficient (0) or negative (-) indication for each aspect. Finally, the mentors give the student a positive (Go) or negative (No-go) judgement on the graduation project.
How is the assessment registered	The assessment and final decisions are registered in Sharepoint.
Consequence of Assessment	With a "Go" the student proceeds to P5. With a "No-go" the student has to register for a new P4 in the next period (retake P4).
Retake	At result "No-go" the retake will be held in the next P4 period. An appointment must be made with the first mentor. If the retake also results in "No-go", an appointment with the study counsellors needs to be made.

P4 responsibilities		
Part	**Action**	**Responsible**
Preparation	Fill in the P4 application form and collect signatures from the two mentors and the delegate. P4 application form can be handed in digital and instead of signatures also E-mail confirmations from delegate and mentors are sufficient.	Student
	Deliver P4 form to Secretariat Education and Student Affairs or digital to BoardofExaminers-BK@tudelft.nl	Student
	Determine who will be the co-reader and register in graduation administration.	Graduation coordinator
	Register the P4 applications in the digital graduation registration.	Secretary Education and Student Affairs
	Check whether student meets the admission requirements.	Education & Student Administration
	Inform the student on the result of the admission check.	Student Administration (SPA-BK) on behalf of the Board of Examiners
	Schedule P4 day, time and location. Scheduled meetings will be part of the course BK-P4 and also the individual Staff Members timetables on My Timetable	Scheduling BK
	Upload thesis in Brightspace course "plagiarism check" and send draft thesis to mentors, delegate and co-reader.	Student
	Deliver written feedback on the thesis before the P4 to the main mentor.	Co-reader
	Assess result of Turn-it In similarity report in Brightspace on students' thesis.	First mentor
At the evaluation	Chairperson	Delegate of the Board of Examiners
	Defend and explain the results, choices and process in discussion between mentors and the student.	Student and mentors (See Appendix 1 for exact description of the products for this evaluation)
At the closed appraisal	Chairperson	Delegate of Board of Examiners
	Determine final assessment.	Both mentors
	Determine if the student must be advised to consult an academic counsellor.	Both mentors and delegate of Board of Examiners
	Document the assessment and conclusion in SharePoint.	First mentor

P4 responsibilities		
Part	**Action**	**Responsible**
Completion	Process graduation document within five workings days (Sharepoint) and send it to student by E-mail, using the button on the assessment form.	First mentor
	Check whether forms are filled in correctly. Undertake action if items are missing.	Education & Student Affairs
	Register P4 completion in Osiris.	Student Administration (SPA-BK)

Evaluation 5 P5 - *Public presentation and final assessment (formal assessment)*

Goal	Public presentation and final assessment.
Where	Reserved room by Scheduling BK.
When	During fixed weeks according to the academic graduation calendar.
Structure	For the student 15 minutes preparation is scheduled, followed by: 30 minutes presentation; 15 minutes questions; 15 minutes closed appraisal; 15 minutes announcing the results and graduation ceremony.
Quorum	First mentor Second mentor Co-reader Delegate of the Board of Examiners.
Chairperson	Delegate of the Board of Examiners.
Assessors	First mentor Second mentor Co-reader
Subjects of assessment	Subjects of assessment are specified in the GM master thesis Rubric (see Appendix 5).
Method of assessment	For the assessment of the research four components are assessed (see Appendix 1 Evaluation criteria). The components and their weights are: 1. Research (50%); 2. Process (20%); 3. Communication (30%) (of which 60% concerns the Report and 40% the Presentation). Both mentors give a mark for all components. The co-reader only gives a mark for the 'Research' and 'Communication' components. All criteria should be awarded with at least 6,0 and also the final mark is at least a 6,0.
How the assessment is registered	The assessment and conclusions are registered on the P5 assessment form in the digital Graduation Registration (Sharepoint).
Consequence of assessment	Student graduates and receives subsequently their Master's degree diploma.

P5 responsibilities		
Part	**Action**	**Responsible**
Preparation	Register a preferred P5 date, in the P5 period according to the graduation calendar, in the digital registration (at P4 assessment form).	First mentor
	Check whether student meets the admission requirements. If yes deliver diploma to Education- & Student Affairs BK.	Education and Student Administration and Central Student Administration.
	Inform student on admission, procedure and P5 obligations.	Secretary Education and Student affairs
	Schedule P5.	Scheduling BK
	Print student's blank P5 mark list.	Secretary Education and Student affairs
	Collect the diploma and blank mark list at Education- & Student Affairs on P5 day, if P5 is NOT online.	Delegate of Board of Examiners
	Send a PDF of the final thesis to the 2 mentors, the co-reader, and the delegate.	Student
	Check thesis for plagiarism by uploading thesis in available Brightspace course. See Appendix 3	Student
	Check outcome of plagiarism check on students' graduation report	First mentor
	Send preliminary evaluation of the graduation work including the proposed marks to the Delegate at latest 1 day before P5.	First mentor, Second mentor, Co-reader
	15 minutes before start evaluation, prepare session.	Student (See Appendix 1 for exact definition for required products for this evaluation)
At the evaluation	Act as chairperson.	Delegate of Board of Examiners
	Present research results.	Student (See appendix 1 for exact definition for required products for this evaluation)
	Ask questions.	In that order: (1) co-reader; (2) 2nd mentor; (3) 1st mentor.
	Assess questions of examiners.	Delegate of Board of Examiners

P5 responsibilities		
Part	**Action**	**Responsible**
At the closed appraisal	Act as chairperson	Delegate of the Board of Examiners
	Give a mark for the 'Research' and 'Presentation and questions' components.	Co-reader.
	Determine the marks for all 4 criteria (see rubric) and the end mark. Each assessor must mark individually and the average of those marks per criteria is the final mark for that criteria.	First mentor, second mentor
	Determine the final end mark: this mark is the weighted average of the 4 criteria marks (see rubric)	Mentor team with approval of delegate of Board of Examiners
	Register all marks on the P5 assessment form in Sharepoint and on the printed P5 mark form.	First mentor
	Open diploma envelop and check if student meets cum laude criteria.	Delegate of Board of Examiners
Completion	Welcome student and public to diploma ceremony and explain procedure.	Delegate of Board of Examiners
	Inform the student and audience about the final result (no marks).	First mentor
	Hand out the envelop with the P5 mark list to student.	First mentor
	Hand out diploma.	Delegate of Board of Examiners
	Sign diploma (both sides).	Student
	Process graduation file (register marks and feedback) within five workings days (Sharepoint).	First mentor
	Maximum one day after P5, upload the final thesis (PDF) and final presentation slides (PDF) to the TU Delft repository. Be aware: the education programme should be "Geomatics"	Student

P5 responsibilities		
Part	**Action**	**Responsible**
Completion		
	Check whether assessment forms are filled in correctly. Undertake action if items are missing; register completion P5.	Education and Student Affairs
	Unsubscribe as TU Delft student, via Studielink Remember to unsubscribe from TU Delft via Studielink in the month of your graduation. You will be unenrolled from the 1st of the next month. If you do not unenroll in time you are required to pay tuition fees for another month. Unenrolling retroactively is not possible. Tuition fee refunds Under certain circumstances the tuition fee can be partly refunded. See website Contact Centre	Student
	Register P5 result in Osiris.	Student Administration (SPA-BK)
	Check uploaded files in TU Delft repository	Graduation coordinator GM
	Send diploma supplement to student address.	Student Administration (SPA-BK)

2.0 Particular circumstances

Quorum at evaluations

A quorum is required for the graduation evaluation to be valid.

- Quorum for P2: First mentor, second mentor, and delegate of the Board of Examiners.
- Quorum for P4: First mentor, second mentor, and delegate of the Board of Examiners
- Quorum for P5: First mentor, second mentor, co-reader, and delegate of the Board of Examiners.

Absence of the Delegate of the Board of Examiners

The Board of examiners appoints delegates of the Board of Examiners and deputy delegates for all evaluations. If the Delegate of Board of Examiners is unable to attend an evaluation, they ask the deputy delegate of the Board of Examiners to replace them. The deputy delegate of the Board of Examiners is registered in the digital graduation registration by the Secretary of the Education and Student Affairs.

Absence of a mentor

Known in advance

If it is known in advance that a mentor or the co-reader will be unable to attend, a presentation must be held for that assessor prior to the evaluation. The assessment and signature of the assessor concerned must be written down with comments and feedback. This letter must be given to the delegate of the Board of Examiners in a closed envelope, or sent by E-mail. At the appraisal, this assessment will be taken into account by the other mentors for determining the final assessment.

Unexpected absence

In case of an unexpected absence there, a replacement must be sought. The Secretariat of the Board of Examiners is also informed by the delegate of the Board of Examiners about this absence. The evaluation should preferably be continued and the final assessment should be determined after he absent mentor has been contacted.

The determination for a Go / No-go (P4) or the registration of the marks on the final mark lists (P5) only takes place after consulting the absent assessor. If this isn't possible, final judgement at the P4 is postponed. At the P5 a "pass" is registered for the involved academic field. In both cases a meeting with the absent First mentor takes place on the shortest possible term, to determine a final conclusion. At doubt or on request of the student, it may be decided that an extra presentation must be held.

Difficulties at the appraisal

It may occur that the appraisal does not lead to an assessment. The delegate of Board of Examiners informs the student on this situation and explains the applied procedure and the corresponding terms. Subsequently, they collect the presented products and present the problem to the chairperson of the Board of examiners.

The Board of examiners will reconvene the assessor team and the delegate of Board of Examiners for a reappraisal, which will be chaired by a member of the Board of Examiners. In this re-appraisal they will attempt to achieve consensus. In case of failing the member of the Board of Examiners will make a final decision.

2.1

Special qualifications

Cum Laude[1]

A student can receive the predicate "cum laude" for the Master's degree audit if the Board of Examiners decides to grant this distinction and the following requirements have been met:

1. the weighted average of the results of the courses not including the Master final Project is at least 8,00; passes (v) and exemptions (vr) will not be taken into consideration
2. the number of credits for the courses for which a pass (v) has been earned or for which an exemption (vr) has been granted may not exceed 20,0 credits in total
3. the result for the Master final Project is at least 8,5
4. the study duration of the Master does not exceed the nominal period of study plus one se-mester, taking into account study-delays based on the Delft Profiling Fund Regulations.

[1] *The complete system is described in Article 2.33 of the Rules and Regulations of the Board of Examiners,, Master Geomatics.*

Honourable mention[2]

On intercession of the mentor and approval of the delegate of the Board of Examiners the predicate Honourable Mention may be attached to the examination result. The condition for this is that the examinee achieved some outstanding result within the graduation phase or the student has delivered a special or exceptional performance.

Already at the P4 the graduation committee of the students determines if the student is nominated for an honourable mention. Within a week after the P4 the main mentor hands in the text for the honour-able mention at the secretariat of the Board of Examiners. After the text is printed on the TU Delft paper the main mentor and secretary of the Board of Examiners will sign the honourable mention.

The student will only be informed on the Honourable Mention at the diploma ceremony. The written Honourable Mention will be handed over to the student together with the P5 mark list.
In case of particular circumstances or exceptional characteristic an Honourable Mention is only possible after agreement from the Board of Examiners.

[2] *The complete system is described in Article 2.34 of the Rules and Regulations of the Board of Examiners,, Master Geomatics.*

Appendix 1 Evaluation criteria

P1	P2	P3	P4	P5
Product: *Preliminary graduation plan*	***Product:*** *Final graduation plan*	**Product:** *Preliminary products proposed in P2*	**Product** *Master's thesis*	**Product** *Final master's thesis*
Research ▪ problem statement ▪ objectives ▪ short methodology ▪ summary in an image/ figure	***Research*** ▪ motivation / problem field /relevance ▪ position in the academic and/or professional field ▪ problem statement, objectives, research questions, ▪ approach, theoretical framework, methodology ▪ references ▪ preliminary project set up and results	***Research*** ▪ methodology ▪ link theory-design & planning ▪ preliminary conclusions	***Research*** ▪ motivation / problem field / relevance approach, theoretical framework,methodology ▪ analyses, research results ▪ conclusions / recommendations ▪ references	***Research*** ▪ motivation / problem field / relevance ▪ theoretical framework,methodology analyses, research results ▪ conclusions / recommendations ▪ references
	Presentation ▪ *report: structure of the report, consistency and clarity, completeness* ▪ *oral: structure, material, summary content, interaction, Q&A*	***Presentation*** ▪ *report: structure of the report, consistency and clarity, completeness*	***Presentation*** ▪ *report: structure of the report, consistency and clarity, completeness* ▪ *oral: structure, material, summary content, interaction, Q&A*	***Presentation*** ▪ *report: structure of the report, consistency and clarity, completeness* ▪ *oral: structure, material, summary content, interaction, Q&A*
	Process ▪ autonomy and pro-activeness ▪ independence and own initiative ▪ originality and scientific level ▪ responsiveness ▪ academic attitude: evidence based, logical, critical ▪ planning	***Process*** ▪ autonomy and pro-activeness ▪ independence and own initiative ▪ originality and scientific level ▪ responsiveness ▪ punctuality ▪ academic attitude: evidence based, logical, critical ▪ planning	***Process*** ▪ autonomy and pro-activeness ▪ independence and own initiative ▪ originality and scientific level ▪ responsiveness ▪ punctuality ▪ academic attitude: evidence based, logical, critical ▪ planning	***Process*** ▪ autonomy and pro-activeness ▪ independence and own initiative ▪ originality and scientific level ▪ responsiveness ▪ punctuality ▪ academic attitude: evidence based, logical, critical
			Project ▪ originality and scientific level ▪ professional significance	***Project*** ▪ originality and scientific level ▪ professional significance ▪ *reflection on the valua of the graduation research in the larger social and scientific framework*

Appendix 2

Format Graduation plan

Front page Graduation Plan

Title graduation project
YOUR NAME
student #123456
y.name@tudelft.nl

1st mentor: Jan Smit
2nd mentor: Gerard Joling
Date P2: 2019–09–23

Content Graduation Plan

1 **Introduction**
An introduction in which the relevance of the project and its place in the context of geomatics is described, along with a clearly-defined problem statement.
2 **Related work**
A related work section in which the relevant literature is presented and linked to the project.
3 **Research questions**
The research questions are clearly defined, along with the scope (ie what you will not be doing).
4 **Methodology**
Overview of the methodology to be used.
5 **Time planning**
Having a Gantt chart is probably a better idea then just a list.
6 **Tools and datasets used**
Since specific data and tools have to be used, it's good to present these concretely, so that the mentors know that you have a grasp of all aspects of the project.

Link to the digital version: https://3d.bk.tudelft.nl/courses/geo2020/templates/

Appendix 3

Plagiarism scan P4 and P5

The Plagiarism Scan has been integrated in Brightspace (see: https://bright-space.tudelft.nl/d2l/home/47493) and is used to guarantee the authenticity of student's graduation work at the Faculty of Architecture and the Built Environment. The Ouriginal tool in Brightspace is used for this purpose. The tool will make it easier for the student and mentors to check the work of a student on originality and plagiarism. It is the responsibility of the main mentor to discuss the Ouriginal Plagiarism report of his/her student at his/her P4.

Each student will upload his or her Master thesis report at latest one week before the P4 meeting and also before the P5 presentation. The mentors and delegates will be enrolled by Education and Student Affairs in the Plagiarism Brightspace course.

The student has the possibility to upload provisional versions of his document as often as he/she wants for plagiarism feedback. This feedback is only meant for the student. The submissions and results in the 'Provisional Version' folder are there just for the student to try things out.

The final version of the P4 and P5 document will be submitted in the final version folder of the plagiarism scan. The final submission folder will only allow one submission for each student and the plagiarism feedback will only be visible for mentors. The student will not be able to see his/her score.

After admission to the P4 the student receives detailed instructions by E-mail about how does the Plagiarism Scan works.

Assessment of result
It is the responsibility of the first mentor to determine whether the results of the plagiarism scan in the final folder are an indication of actual plagiarism. In all cases, suspicion of plagiarism or not, the mentor should share the findings with the student, the other mentors and the delegate at the P4 assessment or in case of the P5 before the P5 date.

If there is a suspicion of intentional plagiarism, the mentor should discuss this with the student and notify the Board of Examiners afterwards.

About Ouriginal:
Ouriginal has certain limitations concerning the documents which will be uploaded. The students will be informed about the limitations, the meaning of similarity scores and plagiarism in general.

Appendix 4

Reflection P5

The reflection is a standard component of a scientific thesis. The reflection is NOT a separate document or a distinct chapter, but integrated in the Introduction and Conclusions of the thesis in the form of text, with diagrams and sketches for purposes of illustration and clarification.

In this reflection the student uses a short substantiated explanation to account for the results of the research in the graduation phase (product, process, planning).

Depending on the research, reflection on a number of the following aspects should be included (you may choose in which order).

Aspect 1
The relationship between the methodical line of approach of the Master Geomatics and the method chosen by the student in this framework.

Aspect 2
The relationship between the conducted research and application of the field geomatics.

Aspect 3
The relationship between the project and the wider social context.

Appendix 5

mark / category	Research (50%)	Process (20%)	Communication (30%) (Report (60%) & Presentation (40%))
insufficient (<5,75)	- General problem cannot be explained - No specific research questions/objectives - Unable to place the research in a wider context, no clear literature research - The research resulted in almost no work, using already existing sources - The results do not answer the research questions - No substantial conclusions	- Not autonomus or proactive at all - Never responsive when new alternatives are suggested - Rarely taking in feedback from supervisors and implementing changes - Misuse of resources (data, computational time, people time) - No real planning, missed most of the deadlines - No original ideas were provided within the project, most of the work is copied and already developed	- Report has no structure - Report does not document sufficiently the research done, not reproducible - Report lacks visual material - Presentation is chaotic, not clear structure - Presentation has no motivation - In presentation loses audience rapidly - Candidate cannot address the questions posed - Clear lack of understanding of the scientific problem under study
6	- Motivation can be broadly discerned, but it is not well understood - General problem is vague or without clear boundaries (scope) - Sufficient introduction and justification of the research topic, but superficial (limited literature review) - The choices of methods and data are not justified or explained - Limited critical attitude and ability to reflect on the wides scope of application of the research - The answers to the research questions are satisfactory - Results interpreted to a limited extent	- Sometimes autonomous and proactive, but generally needed steering by supervisors - Rarely came up with creative new ideas and new sources of information - Little response/action to feedback from supervisors for self-improvement - Makes inefficient but passable use of resources (e.g. tools, data, own/supervisor's time) - Contribution to the project is somewhat original - Limited initiative and suggestions within the project - Basic timeline and plan prepared, but little followed or updated	- Report has just right structure, consistency and clarity, with significant corrections by supervisors - Report does not document all the parts of the research done (reproducibility issues) - Presentation follows a structure, but with some issues in clarity - Presentation gives a decent summary of motivation, problem, work done, results and conclusions - Sufficient presentation material (e.g. slides, videos, demos) - Interaction with the audience is sufficient (eye contact, body language, tone of voice, pace of speaking) - Gets attention of the audience - Can answer most of the questions raised - Shows superficial knowledge, not in depth control of the topic
7	- Motivation can be understood and related to the problem - General problem is clear with defined boundaries (scope) - Sufficient introduction and justification of the research topic, with fair literature support (decent literature review) - The choices of methods and data are partly justified - Fair critical attitude and ability to reflect on the wides scope of application of the research - The answers for the research questions are more than satisfactory - Results interpreted with a critical attitude independently	- Mostly autonomous, generally trying approaches before asking for help - Few times came up with new ideas or found new sources of information - Was able to contribute to discussions about the research during meetings - Critical attitude towards the work done, but most key issues had to be pointed out by supervisors - Uses feedback from supervisors for self-improvement - Use of resources is appropriate (e.g., tools, data, own/supervisor's time) - Contribution to the project is partly original - Some initiative and suggestions by the student - Good timeline and plan prepared, often followed or updated	- Report follows a structure, with issues in clarity and organization - Report documents all the parts of the research done (no reproducibility issues) - Report is generally well written, but contains significant errors and needs improvements - Abstract does not capture most of the work - Report properly acknowledges other work broadly and contains a fair list of references - Presentation follows a structure, but with some issues in clarity and organization - Presentation gives a decent summary of motivation, problem, work done, results and conclusions - Good presentation material (e.g. slides, videos, demos) - Interaction with the audience is appropriate (eye contact, body language, tone of voice, pace of speaking) - Gets attention of the audience and maintains it to some extent - Questions are answered well with some gaps - Confident with the content for its application
8	- Motivation is clearly shown and connected to the probelm - General problem is clear and has defined limitations - Good introduction and justification of the research topic with supporting literature (but not all included) - The choices of methods and data are justified and logical - Demonstrate critical attitude and ability to reflect on the wides scope of application of the research - The answers to the research questions are good - Results interpreted critically and discussed in a broader scope of the discipline	- Mostly autonomous and proactive, generally taking control of the project and steering it to completion with some hiccups - Sometimes came up with new ideas and found new sources of information - Was able to contribute to lively discussions about the project during meetings - Critical attitude towards the work done, but key issues had to be pointed out by supervisors - Sometimes uses feedback from supervisors for self-improvement - Makes good use of resources (e.g. tools, data, own/supervisor's time) - Contribution to the project is original, with suggestions by supervisors - Several initiative and suggestions within the project - Prepared a good and feasible plan at the beginning of the research project, which was mostly followed or adjusted when needed (e.g. according to progress and new findings)	- Report follows a structure, with minor issues in clarity - Report documents all the parts of the research done (no reproducibility issues) - Report is generally well written, but contains a few errors and needs improvements - Abstract captures most of the work - Report properly acknowledges other work most of the time and contains a mostly complete list of references - Work yields some other output (e.g. software, data), which is added to the report - Presentation follows a structure, but with some issues in clarity - Presentation gives a good summary of motivation, problem, work done, results and conclusions - More than satisfactory material (e.g. slides, videos, demos) - Interaction with the audience is good (eye contact, body language, tone of voice, pace of speaking) - Maintains attention of the audience for most of the presentation - Most questions are correctly answered - Very confident with the content at a research and development level
9	- Motivation is clearly described and connected with the need of solutions of the problem - General problem is clear, has boundaries or limitations and is feasible - Good introduction and justification of the research topic, with vast literature support - The choices of methods and data are justified and logical - Good critical attitude and ability to reflect on the wides scope of application of the research - The answers to the research qestions are very good - Results interpreted critically and discussed in a broader scope of the discipline, with proposed solutions or alternative approaches when necessary	- Autonomous and proactive, taking control of the project and steering it - Most times came up with new ideas and found new sources of information - Was able to lead lively discussions about the research during meetings - Critical attitude towards the work done, pointing out the issues by him/her/theirselves - Uses feedback from supervisors for self-improvement - Makes very good use of resources (e.g. tools, data, own/supervisor's time) - Contribution to the project is original, with almost no intervention by supervisors - Many initiative and suggestions within the project - Prepared a clear and feasible plan at the beginning of the research project, which was followed and improved when needed (e.g. according to progress and new findings)	- Report follows a clear structure - Report documents all the parts of the research done - Report is well written, with a very few writing errors - Abstract captures the essence of the work - Report properly acknowledges other work most of the time and contains a mostly complete list of references - Work yields some other output (e.g. software, data), which is added to the report and published in an ad hoc manner - Presentation follows a clear structure - Presentation gives a very good summary of motivation, problem, work done, results and conclusions - Very good presentation material (e.g. slides, videos, demos) - Interaction with the audience is very good (eye contact, body language, tone of voice, pace of speaking) - Maintains constant attention of the audience - Questions are answered well, without further deepening in the topic - Masters the content within the research topic
10	- Motivation is perfectly presented and connected with the need of solutions of the problem - General problem is clear, has boundaries or limitations and is feasible with the approach proposed - Excellent introduction and justification of the research topic, with all literature support - The choices of methods and data are justified, logical and the most efficient at the moment - Excellent critical attitude and ability to reflect on the wides scope of application of the research, making connection to simultaneous research performed by other peers - Results interpreted critically and discussed in a broader scope of the discipline, with proposed solutions or alternative approaches when necessary - The answers to the research questions are excellent - There is a clear evidence that the student is able to design new techniques or combine different techniques succesfully in an innovative manner	- Highly autonomous and proactive throughout the process, taking full control of the project and steering it to completion in an efficient manner - Always came up with creative new ideas and found new sources of information - Was able to lead lively discussions about the research during meetings - Critical own attitude towards the work done - Actively uses both own discoveries and feedback from supervisors for self-improvement - Makes highly efficient use of resources (e.g. tools, data, own/supervisor's time) - Contribution to the project is original - Makes all initiative and suggestions within the project - Prepared an efficient, clear and feasible plan at the beginning of the research project, which was followed and improved when needed (e.g. according to progress and new findings)	- Report follows a clear and logical structure - Report thoroughly documents all the parts of the research done, which could be readily replicated using only the report as a base - Report is well written using clear scientific language and few errors - Report is visually appealing and uses figures and tables to best explain aspects of the research - Abstract captures the essence of the work - Report properly acknowledges other work everywhere and contains a complete and well-formatted list of references - Work attempts to yield other output (e.g. software, data) whenever possible, which is published following open science best practices (e.g. fully available source code on public repository with documentation and sample data) - Presentation follows a clear and logical structure - Presentation gives an easy to understand summary of motivation, problem, work done, results and conclusions - High-quality presentation material (e.g. slides, videos, demos) - Interaction with the audience is outstanding (eye contact, body language, tone of voice, pace of speaking) - Maintains constant attention of the audience - Questions are answered succinctly and with full awareness of the strengths and weaknesses of the research - Masters the content beyond the research topic

Appendix 6

Reference to official regulations

Subject	Registered at	Article
Graduation project	*Teaching and Examination Regulations, Master of Science Geomatics, 2022-2023.*	Article 1.7, subsection 5 and 7
Admission to the graduation phase	*Teaching and Examination Regulations, Master of Science Geomatics, 2022-2023.*	Article 1.7, subsection 6
Validity of P2 result	*Teaching and Examination Regulations, Master of Science Geomatics, 2022-2023.*	Article 1.30, subsection 4 and 5
Additional rules governing Master final Project	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.26
Composition of the assessment committee for Master Thesis Project	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.27
Appointment of delegate of the Board of Examiners	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.5, subsection 4
Language graduation	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.7, subsection 3
Working method of the assessment committee	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.28
Plagiarism scan	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.10
Publication graduation work in TU Delft repository	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.19, subsection 6
Possibility for embargo on work in repository	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.19, subsection 7
Official date of Master final project result	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.29
Pass and fail rules	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.30
Pass and fail rules governing the Honours Program Master	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics, 2022-2023*	Article 2.31
Pass and fail rules governing annotations	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics for the Built Environment, academic year 2022-2023*	Article 2.32
Conferring the predicate "cum laude"	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics for the Built Environment, academic year 2022-2023*	Article 2.33
Degree certificates, supplement and results achieved	*Rules and Guidelines of the Board of Examiners, Master of Science Geomatics for the Built Environment, academic year 2022-2023*	Article 2.35 and 2.36

Appendix 7

Standard time slots for evaluations (P2, P4 and P5)

Timetable P2

08:45 – 09:45
09:45 – 10:45
10:45 – 11:45
11:45 – 12:45

Break

13:45 – 14:45
14:45 – 15:45
15:45 – 16:45
16:45 – 17:45

Timetable P4
(15 minutes extra time at the end is included – only used if needed)

08:45 – 09:45
09:45 – 10:45
10:45 – 11:45
11:45 – 12:45

Break

13:45 – 14:45
14:45 – 15:45
15:45 – 16:45
16:45 – 17:45

Timetable P5
(first 15 minutes is for the student to prepare)

08:45 – 10:30
10:45 – 12:30
12:45 – 14:30
14:45 – 16:30
16:45 – 18:30

Academic Graduation Calendar 2023 / 2024

Autumn semester

Calendar Week	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5
Teaching week	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	2.1	2.2	2.3	2.4	2.5	2.6	Christmas period		2.7	2.8	2.9	2.10

	Sept.				Oct.					Nov.				Dec.					Jan.				
Mon	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29
Tues	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30
Wed	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31
Thurs	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	1
Fri	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	2

Spring semester

Calendar Week	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Teaching week	Spring break	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.10

	Feb.				Mar.				Apr.					May				June				
Mon	5	12	19	26	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24
Tues	6	13	20	27	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25
Wed	7	14	21	28	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26
Thurs	8	15	22	29	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27
Fri	9	16	23	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28

Summer period

Calendar Week	27	28	29	30	31	32	33	34	35
Summer period	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9

	July					Aug.			
Mon	1	8	15	22	29	5	12	19	26
Tues	2	9	16	23	30	6	13	20	27
Wed	3	10	17	24	31	7	14	21	28
Thurs	4	11	18	25	1	8	15	22	29
Fri	5	12	19	26	2	9	16	23	30

Public Holidays	
Christmas period	Dec 25 - Jan 5
Spring Break	Feb 5 - Feb 9
Good Friday	March 29
Easter	March 31 & April 1
Kings Day	April 27
Liberation Day	May 5
Ascension Day	May 9
Whit Monday	Monday 20

Final registration dates for P2
Final application dates for P4: go / no-go
P5 date and final application date for next P4 period: go / no-go
Last date P4 and also final application dates for P5: Public Final Presentations
Public final presentations take place in the period immediately after the prior P4: go / no-go period

Education
No regular education
P2: Dates presentations:
P4: Dates go / no-go assessments:
P5: Dates final public presentations: