

# How-to-Guide: Remote Oral Exams

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Version Q1: 2 October 2020

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# 1. For whom?

This document is intended for lecturers who want to switch assessment of their course to a remote oral exam. The guide has been written with a speedy, yet quality conversion to a remote oral exam in mind with the aim that this guide will make life a little easier for both staff and students. The content is based on educational best practice in oral exams and remote assessment, the possibilities and limitations of the software stipulated for use by TU Delft, and the invaluable input of several experienced lecturers at TU Delft who regularly do oral exams, all be it generally not remote.

This document is intended as a practical guide and includes a checklist in Appendix A. More information on why you should, or should not, use oral exams can be found in the [How-to-guide: Make Your Assessment Remote](#). The author would like to thank everyone who contributed to this guide, in particular, Lisette, Bas, Ken, Daniel, Willem, Lesley, and Tadgh. This document aims to be as complete as possible at the time of writing, but it is a living document and will be updated continuously. Feedback, comments, suggestions, and examples of best practice are welcome.

## 2. Selecting a remote oral exam

All lecturers, who regularly use oral exams as an assessment, that were interviewed during the creation of this manual, named the same two arguments on why they like oral exams. The first is that oral exams are a great way to interact with students and therefore very enjoyable. The second thing they said is that oral exams allow you to probe the full extent of the students' knowledge and understanding and that you get a good feel of the level of each student. An additional advantage that was often named is that although it may require more preparation, there is far less grading to do afterwards.

An oral exam is an examination format in which a student is verbally assessed on their mastery of the learning objectives set for a course. Typically, there are two types of oral exams:

1. A **stand-alone** oral exam in which a student is verbally examined on the learning objectives of the entire course.
2. A **complementary** oral exam which usually acts as a supplement to a take-home assignment, a time-limited small assignment, or a digital exam to probe deeper understanding and check for originality.

It is important to realize that the difference between an **oral exam** and a remote **oral exam** is that there is less direct interaction possible due to the fact you are not in one room. There is an inevitable delay when speaking and it is much harder to sketch something quickly for students to illustrate your question. Equally asking students to work out a question on the whiteboard in your office is also not straight forward.

Keep in mind that in the current situation, flexibility and timely completion of exams is paramount and that switching exam format to a remote oral exam in itself is already a challenge for both the students and you.



## 2.1 Which Type of Remote Oral Exam fits my course?

The table below shows you the global characteristics of each type. Make the choice that best fits the learning objectives of your course, taking Bloom's levels<sup>1</sup> into account and is feasible for you in the time that you have.

	Standalone		Complementary	
	Remote Oral	Remote Oral + Take-Home Assignment	Remote Oral + Time Limited Assignment	Remote Oral + Digital Exam
Max. No of students <sup>2</sup>	< 30	< 60	< 60	< 60
Typical coverage of Learning Objectives	100% covered in exam	85% covered in assignment, 15% in exam	85% covered in assignment, 15% in exam	85% covered in digital exam, 15% in oral exam
Recommended Length	Max. 1 hour	Max. 30 min	Max. 15 min	Max. 15 min
Suitable for Bloom's level	Theory-based levels 1-3 only, except for case studies 4-6	Assignment: 3-6 Oral: 1-6	Assignment: 1-6 Oral: also 1-5	Exam: 1-5 Oral: also 1-5
Suitable for Testing in oral:	Presentation & language skills, Case-studies analyses Knowledge & understanding testing	Originality checking, probing of extend and depth of knowledge	Originality checking	Originality checking
Unsuitable for testing in Oral	Computations, Scientific Analyses, Online Analytical Problem Solving	N/A	Probing of extent and depth of knowledge	Probing of extent and depth of knowledge
Staff preparation	<b>High:</b> Need to develop: - Sufficiently large question bank - Sample exam and answers - Exam script	<b>Medium-High:</b> Need to develop: - Sufficiently large question bank - Sample exam and answers - Exam script	<b>Assignment: Medium</b> Need to develop: - Sample exam and answers - Exam script	<b>Medium – very High</b> Need to develop - Digital Exam and put in system. - Sample exam and answers - Exam script  <i>Möbius has a steep learning curve</i>
Student preparation	<b>High</b> Students likely to overprepare and memorize details	<b>Medium/High</b> Especially if many or long assignments	<b>Medium</b>	<b>Medium</b>
Time to complete examinations	<b>High</b> The more students, the longer	<b>Medium to high</b> depending on student numbers	<b>Low-Medium</b> depending on duration of assignment	<b>Low-Medium</b> depending on numbers open questions
Marking time of oral exam	<b>Low</b>	<b>Low - High</b> depending on assignments	<b>Medium</b>	<b>Low- Medium</b>
External Support needed	No	No	No	<b>Brightspace: No</b> <b>Möbius: Yes</b>
Operating Software Experience needed	Able to operate and run chosen conference software and communicate through Brightspace	Same as stand-alone oral exam plus: Be able to use Assignments in Brightspace	Same as stand-alone oral exam plus: Be able to use Assignments in Brightspace	Same as stand-alone oral exam plus: Be able to use Assignments and or quizzes in Brightspace. or Möbius.
Fraud sensitivity	<b>Low</b> if sufficient variation in oral questions	<b>Low</b> if sufficient variation in oral questions	<b>Low</b>	<b>Low</b>

<sup>1</sup> Bloom's taxonomy levels: 1. Remember, 2. Understand, 3. Apply, 4. Analyze, 5. Evaluate, 6. Create

<sup>2</sup> Number of students is indicative.



<b>Reliability</b>	Medium but will be low if insufficient variation in questions Risk of grading bias	High but will be Medium if insufficient variation in questions	High	High
<b>Validity</b>	High, if all individual exams assess all learning objectives and are of comparable difficulty	High: balanced between activities and LO	High: balanced between activities and LO	High: balanced between activities and LO
<b>Ease of conversion from written exam</b>	Moderate to hard depending on level of experience.	Easy - Moderate if you can use the exam you already had prepared	Time-Limited: – Moderate if you can use the exam you already had prepared	Easy – Moderate for Brightspace depending on your experience and availability of Hard for Möbius

Table 1: Comparison of the different types of remote oral exams

### Some things to keep in mind when choosing your format

Although most conference software allows for screen sharing which would enable you to sketch things or ask students to share their screen to sketch things, this can be quite cumbersome for both parties involved as neither part will have much experience with this and will make remote oral exams drag out longer, especially as your preparation time in the current situation is limited. If you want students to work something out, consider using a take-home assignment that you could make available through Brightspace so they only have to show you the answer by sharing their screen or uploading the file in the conference software. In appendix D you can see an on-campus example used at TU Delft.

Be mindful that research has shown that oral-only exams are not popular with students. Students find them incredibly hard to study for as they perceive a lot of uncertainty on what and how to study for. Therefore, they tend to spend a lot more time studying, greatly increasing their study load. They also feel it favors students who go last and students who are better at verbal communications or have had more interactions with a lecturer than they have had.

These exams can indeed have validity and reliability issues due to examiner bias and examiners not following quality guidelines. Please do all you can to adhere to the quality standards and communicate clearly to students, especially if there is a relatively short time in which you have to convert your exam.

### Inclusiveness

To safeguard the right that all students have the same chances of success, please be aware of the challenges for non-native speakers, students with anxiety disorders, speech disorders and/or hearing problems in oral exams. Try and make accommodations during the exam should this become apparent such as using the chat function or whiteboard function in the videoconferencing software. If disclosed beforehand, consult with academic counsellors on what would be reasonable and feasible allowances.

## 2.2 Regulatory requirements for remote oral exams

As with any exam, there are a few requirements that must be met to meet university examination regulations. Due to the special circumstances, there are a few additional requirements. Here is a quick reminder:

1. Most Teaching and Examination Regulations (TER, in Dutch: Onderwijs- en examenregeling, OER) stipulate in article 18.3 that two qualified examiners are required to perform each oral exam. Your Board of Examiners may (please check) rule that if this is not possible, one examiner may perform the remote oral exam, but in that case, the remote oral exam must be recorded. However, in view of appeals, it may be wise to record all exams. Do inform students that this will happen and record their agreement. See the [Security and Privacy for Oral Examinations Guide](#) for instructions and GDPR proof software and storage of the recording.

- Students need to be made aware of all relevant information about the remote oral exam in advance. This includes the names of the examiners, duration of the exam, deadlines for any take-home assignments, how to register, the language of the exam, etc. (TER art. 16.5).
- The TER requires you to provide students with a sample exam and answers for them to prepare properly (TER art. 16.5).
- Students must show their TU Delft registration card to the lecturer at the start of the exam (TER art. 18.4), but **DO NOT** record this.
- The (partial) grade of the oral exam should be communicated at the end of the oral exam (TER, art. 19.3) and the student should be issued a written statement of this. The latter could be replaced by publishing the student's individual result in Brightspace Grade Center.

### 3. Designing your Remote Oral Exam

Now that you have made your choice, it is time to start preparing. This section outlines the (mental) steps you take when designing a remote oral exam. It helps to write it down as you may need to share this information with a colleague in case you are unable to act as an examiner or when the Board of Examiners would like more information.

#### 3.1 Step 1: Create an Assessment Matrix

You may already have an assessment matrix for your course that you can convert for this. If not, in an assessment matrix you map all the learning objectives (LOs) onto your assessment activities and indicate which part of the learning objective (using Bloom's level) is examined using what method and distributed how. A generic matrix is shown in table 2. You can adjust the number of rows and columns depending on your chosen exam format and length. Keep in mind that oral exams should also be valid and reliable, so ensure you ask every student, the same amount of questions starting at the same level. However, some of the questions should also have an ever-increasing level of depth within the Bloom's level of the learning objective allowing well-prepared students to also still be challenged. This is in particular the case when examining MSc. courses.

Learning objective	Bloom's cognitive levels						Percentage of total score
	Remember (recall basic information)	Understand (explain ideas and concepts)	Apply (apply information in a new way)	Analyze (distinguish components)	Evaluate (justify a stand or position)	Create (create a new product)	
LO 1		5%		5%			10%
LO 2	5%	5%	5%		10%	5%	30%
LO 3				5%	10%		20%
LO 4		5%	10%				15%
LO 5			5%	15%		5%	25%
<b>Total</b>	<b>5%</b>	<b>15%</b>	<b>20%</b>	<b>25%</b>	<b>20%</b>	<b>10%</b>	<b>100%</b>

Table 2: Outline of an assessment matrix for an oral exam

When completed, quickly compare this matrix with the actual teaching that you did this quarter to check that you actually covered all learning objectives at the right Bloom's level in your learning activities. If necessary, make adjustments.

#### 3.2 Step 2: Create Assignments and Exam Questions (and Answers)

Now that you have designed what you will ask where in the exam, you develop the actual assignments and exam questions.

##### 3.2.1 Assignments:

If you have assignments, please ensure they are doable in the time you stipulated. Especially in the current situation, be careful not to over ask students. As a rule-of-thumb, use the number of EC to determine the workload. A 3 EC course has a workload of 84 hours. Assuming 28h of lectures and 14h of lecture preparation, this leaves for 42h to divide between studying the material and the assignment. Ask colleagues for advice and ensure you have



worked out the answers for the assignment. Have your assignment peer-reviewed by a colleague before handing it to the students so that you have minimized the possibility of errors. If you already prepared your written exam, it may be worthwhile examining whether it is usable as a take-home assignment or a time-limited assignment. For more information on assignments, see the [TU Delft UTQ reader on Assessment](#).

### 3.2.2 Oral exam questions:

As a general rule, do not go into the exam unprepared. Especially if you spread the workload over multiple examiners, it is important that you are consistent when asking questions. Have a list of questions that is similar in level and difficulty and spread across your learning objectives as mapped in your assessment matrix. Also, keep in mind that you may be unable to act as an examiner due to unexpected circumstances or that you may work in a team of assessors. It is important everybody does the same and has the same information.

#### How many questions per learning objective?

As said before, one of the biggest complaints of students about the quality of oral exams is that if you are one of the first students to have to do the oral exam, it is much harder. As by the time the last student has to take the exam, students have all spoken to each other. Later students are therefore more able to learn to the grade and are seen to have an easier time. Colleagues who frequently make use of oral exams know this and have taken this into account in their design. This is why it is essential that you build up a question bank of equivalent questions in an oral exam that you vary greatly and randomly.

**TIP:** As a rule of thumb, you only want to use simple questions 3-4 times in total per year and more in-depth questions, usually no more than 5 or 6 times. This allows you to calculate the number of questions you need based on the number of students you have.

**TIP:** You do not have to think up every question from scratch. You can always use resources such as questions from previous exams or questions from a competing textbook to yours.

**TIP:** Oral assessments are relatively short by nature, so you cannot ask every student about every topic. That is OK as students will not know in advance which topics you will probe them on and therefore must master them. Do not ask too many questions and try and cover everything. Time is limited. As an indication: for a small check 2 or 3 small questions may do, for a 30-minute exam 2 small questions plus 2 or 3 more probing questions, and for a full oral exam 8 or 9 questions, increasing in difficulty as you go on. In complementary oral exams, this inevitably means that you cannot probe the students' mastery of all learning objectives.

#### Level of questions

Use your assessment matrix as a quick way to verify that each question is of the right level as per the assessment matrix. If you are using the remote oral exam also as a check that students did the assignments themselves, ensure you link some of the questions to the assignments. In an oral exam often probing questions are asked to see where the extent and depth of a student's knowledge is. These higher Bloom's level questions allow students to show what they are made of. Typically, they are structured such that you can continue probing by asking questions such as: "what if this variable changes, what would happen there?" which can have very shallow to very in-depth answers. You can then prompt the student for more details if necessary.

#### Answers

After having developed each question, also develop the answer to each question. This is a great way of checking if your question is of the right Bloom's taxonomy level and to see if the question is as easy or as hard as you thought it would be.

**TIP:** Do have a colleague check your questions and answers for errors and suitability. Two pairs of eyes see more than one.



## Organizing the questions into an exam

Decide an order in which you want to ask each type of question in an exam. All lecturers interviewed in the making of this guide strongly recommended to start with an easy question to ease the student into the exam, in case of assignments often linked to the assignment with which the student is familiar. Be careful with starting with a factual knowledge question. These may lead (good) students to clamp up if they cannot recall them. Students are so incredibly nervous that if you go in deep at the beginning, they blackout. Allow them to ease in and get used to this situation. Also, determine how and when you will vary the questions.

### 3.3 Step 3: Decide on Grading and Create a Grading Scheme

If you have a complementary oral exam, use the grade division between the oral part and the assignment or digital exam part, that was approved by the BoE when you asked for a change in exam format. For take-home assignments, this is usually between 50-70% for the assignments and 30-50% for the oral, but all variations are possible.

It is assumed you already know how to grade an assignment, so this part just focusses on the grading of the remote oral exam. The TER makes it compulsory to immediately inform the students of their grade for the oral part of an assessment (after conferring with a co-examiner, where applicable). It is therefore important that you have a good grading scheme in place that all examiners in your course agree upon so that you can inform the student of the grade immediately.

The weighing of each question follows from your assessment matrix. However, now you have to determine a score for each question. We strongly advise you to use a rubric or answer model for all questions.

Closed questions with a fixed answer are easy to score as wrong or right, even in an oral exam. When the answers to a question are generally open, students can show different levels of mastery in answering such a question. You can judge them on how much prompting they need or how far they are able to apply the knowledge to different problems and situations independently (when you examine your Bloom's level 5 and 6 LOs). With higher-level Bloom's questions, it is hard to grade in terms of right or wrong. It is far more about the level of mastery. In those cases, you could use rubrics. There are two types of rubrics to assess a student's mastery: a holistic rubric and an analytic rubric:

- A **holistic rubric** focuses on scoring the student for their overall quality proficiency or understanding of specific content, especially when there is no definitive correct answer. When writing holistic rubrics, use thorough narrative descriptions for excellent work and poor work incorporating each attribute into the description and from there what lies in between.
- An **analytical rubric** is more suitable when the required response is very focused and there are many questions at different Bloom's levels. Start by writing thorough narrative descriptions for excellent work and poor work for each criterion (aspect, attribute) and then create the cells in between. In Appendix C, you can find examples and templates to create them.

**TIP:** Don't make your levels too detailed; 3 levels are usually more than enough. An alternative version of a rubric is to grade the outcomes in terms of mastery of Bloom's levels, as seen in the example of a TU Delft colleague in Appendix D.

When finished, create a grading form that you can easily fill in for each oral exam with room for comments that you can archive to refer to in case of appeals. Ensure you and your examiners are in agreement and get advice from peers if possible. An example of such a form used by one of our TU Delft colleagues can be found in Appendix D. In appendix E, a template top half of a grading sheet is given for you to use.



### 3.4 Step 4 Create an Exam Script

This part may seem superfluous, but it will save you time and potential embarrassment during the exam. Script the exam so that you have a checklist during the exam that you have asked each student the same (level) questions and that you have not forgotten anything. This may be combined on your grading form. Whatever works for you.

### 3.5 Step 5 Create a Sample Exam

The OER requires you to provide students with a sample exam and answers for them to prepare properly. Please do so. It will make the exam go a lot smoother if a student knows what to expect. They are less nervous and you are less likely to have students wanting to argue about their grade. Especially in the current situation, avoiding this is really important.

To do so, simply select relevant questions and answers from your question list and answer model that would form a typical remote exam and how you would grade them. Do this ideally in a script or chronological format. Warn students that questions are randomly selected and that the sample is an indication of the type of questions and the type of answers expected. What level of conceptual understanding do you require? A good practical example from one of our TU colleagues can be found in Appendix D.

Note: If you are using a time-limited assignment or a digital exam you must also provide students with sample or practice versions of those. This does not apply to assignments. It does not have to be hard if you are using your prepared exams. Just refer the students to the old exams you already had on your Brightspace page (or really should have had!). Be mindful that if you use [Brightspace Quizzes](#), [Brightspace Assignments](#), or [Möbius](#) that students must be able to practice with these tools. To assist them, create a dummy quiz or assignment.

## 4 Student Communication

Realize that for many students, this is likely the first time they will sit an oral exam. To avoid your mailbox being inundated with questions prior to the exam and a flurry of appeals by students who feel unjustly done by after the exam, you must communicate all relevant information to students in a clear and structured manner. The following items are vital to be communicated to students:

1. Tell students as soon as possible what the exam format is (especially if you are switching to a different exam format) and whether or not the exam will be recorded.
2. Explain what the timeline will be. When will they hear more about dates and times and what is expected?
3. Post everything you email to students also as an announcement on the Brightspace page of your course.
4. When using assignments, make sure students know when the assignment will come available and how (Use Brightspace to post assignment), when the deadline for handing in is, and where it must be handed in ([Use Assignments in Brightspace with TurnItIn](#) and specify due and end dates), and whether or not they are allowed to work together. If they are, do make them declare that so you can do better checking). Note: students must hand in individually and individual reports unless you specified the work as group work.
5. If you are using time-limited exams or quizzes, make sure students know how and when to log in to start their assignment/quiz/digital exam and test everything works. Create a timed-hand-in-assignment on [Brightspace Assignments](#) for handing in of Time Limited Assignments or [timed exam in Brightspace quizzes](#). Communicate where they can find the dummy quiz or assignment upload so that students can have a test run.
6. Communicate, as soon as possible, the dates of the oral exam and the conference software you will be using for the oral exam with links to manuals and how they can register for a time slot. Plan this period as tight as possible and in conjunction with the relevant coordinator of your Faculty to avoid clashing with other colleagues. Use [Brightspace Group Tool](#) in combination with the [Import/Export Group Tool](#) with  $n = 1$  per timeslot with self-enroll enabled to arrange this. Note: using a Google doc is not GDPR compliant.
7. Ensure all students are sent an online meeting request of their chosen slot, ideally with the link to the conference software in it.
8. How can students ask questions before the exam? Consider creating an online open office hour one or two days before the oral exam starts for questions through [Brightspace YouSeeU](#).





9. Make students aware that this is a formal exam moment. Ask them to treat it as such, to be presentable, situate themselves against a neutral background when they do the remote exam and that the room they use is quiet with no one else present.
10. Make students aware that they have an empty desk and specify what material they may have available such as pen and paper, but also whether they can have their calculator, book, or notes available.
11. No later than 4 working days before the first oral exam: Communicate to students that you have posted the sample exam, when they can (and should) test the conference software, what material they may have open or use during the oral exam, and what other helplines they may or may not use.
12. Inform students that they must be able to show their valid TU Delft student card at the beginning of the exam.

A good practical example of what to say for a face-to-face oral exam from one of our TU colleagues can be found in Appendix D.

## 5. The Actual Exam

On the day of the actual exam, make sure everything works on your side of things. Have your (quiet) room ready (with tidy background) as well as printouts of the exam script, the grading sheets, the list of students, and some pens. Have a quick pre-exam chat with your co-examiner, grab a beverage, and start the first remote exam.

### Before formally starting the exam (and the recording):

1. Check the connection is stable (a cabled connection is advised) and that you, the co-examiner, and the student can all hear each other. If not, log off and restart the meeting. If this does not work, explain the situation and reschedule the exam for a later date.
2. Be welcoming to the student and put them at ease. These are crazy times, so it really helps if you ask them how they are.
3. Ask the student to show you their official TU Delft student card as proof of identity. **Note:** you are not allowed to record this!

### Starting the actual exam

4. If you are recording the exam, do not forget to press "**record**".
5. Now start the formal exam. Explain the procedure and include that students cannot record or take photos of the exam themselves and what type of questions they can ask during the exam (such as clarification questions) and whether or not you are recording.
6. Ask students to state their compliance with the honour code. For instance, you can use:  
For a remote oral exam:  
*"I promise that I will not use unauthorized help from people or other sources during my exam. All my answers are my own. I also promise not to share the questions I was asked during this exam with other students."*  
Assignments or digital exam:  
*"I promise that I have not used unauthorized help from people or other sources for completing my exam/assignment/time-limited assignment. I created the submitted answers all by myself (during the time slot that was allocated for that specific exam/assignment). I also promise that I will not use unauthorized help from people or other sources during my oral exam. All my answers are my own. Finally, I promise not to share the questions I was asked during this exam with other students"*
7. Now ease into the exam with an easy starter question.
8. Continue the exam according to your script and make sure the student is not getting uncomfortable. If you feel they are blacking out, move to the next question and come back to it later.  
 Keep an eye on the time, using a separate clock next to your screen or the timer on your mobile phone.

## After the exam

9. When the time has expired, ask the student to log off while you confer with your co-examiner or mute the call and phone your co-examiner to confer on the grade.
10. Invite the student back and confer the grade and feedback of the oral exam to the student.
11. After completing all exams, enter all grades into Osiris and keep your notes in case of appeals. Destroy these after the statutory period has expired in line with GDPR rules. If you have recorded the exam, follow the instructions regarding storage as listed in the [Security and Privacy for Oral Examinations Guide](#).
12. Delete all recordings two months after you have published the grade in Osiris except for exams that are being appealed. Those need to be destroyed 2 months after the full complaint procedure has been completed.

## 6. More Information

Hopefully, this is all the information you need. Appendix A contains a handy checklist for the exam. Appendix B lists a whole array of Dos and Don'ts based on interviews with colleagues and literature. Some additional deepening resources have been listed below. And don't forget, you do not have to do this alone! Ask a colleague to help or act as a peer reviewer. Good luck!

- If you would like more information on constructive alignment and assessment, please refer to [UTQ assess reader of TU Delft](#).
- Links to the TER of each programme: <https://www.tudelft.nl/en/student/legal-position/education-regulations/ter/>
- For other alternatives to remote assessment, please read the [TU Delft How to guide on Remote Assessment](#)
- [Security and Privacy for Oral Examinations Guide](#).
- For more background on oral exams, read [A short guide to oral exams by Gordon Joughin of Leeds Metropolitan University](#). This general guide is more geared towards medicine and humanities.
- For more help in creating Rubrics, either refer to the UTQ Assess reader or [this practical paper by Mertler](#).
- For help with creating Brightspace quizzes and Assignments, refer to [Brightspace help](#).
- For more information on inclusive education in the Netherlands: [ECIO](#)
- For Brightspace support: email: [brightspace@tudelft.nl](mailto:brightspace@tudelft.nl) or phone: 015- 27 84 333. They will either answer your question themselves or refer your question to one of the learning developers at Teaching and Learning Services.

# Appendix A: Checklist

## Before the Exam

- Arrange with BoE that you can change to your chosen exam format
- Confer with the Education Services Department/track coordinator/programme manager/programme director when would be a good time to organize your oral exams and set deadlines for any assignments.
- Communicate these changes and dates asap to all students registered for the exam.
- Communicate to all students, what material they may have open or use during the oral exam, and what other helplines they may or may not use.
- Arrange for students to pick an exam time slot.
- Communicate to all participants which conference software will be used for the exam and how they can use or install it on their machine
- Arrange for each student to receive a digital invitation to a remote exam that includes an invitation link
- Remind students they must have their TU Delft Student registration card ready to show at the exam.
- Remind students that they need to be presentable, sit against a neutral background in a quiet room with no one else present and that they will be asked to show their whole room with their webcam.
- Inform them of the procedure during the exam (see 'during exam')
- Arrange for a trial online session for students before the exam to test the set up on their side.
- Communicate to students how and when they can ask questions before the start of the first exam
- Communicate to students when sample questions and answers, the grading procedure and criteria, as well as a generic script of the exam have been uploaded to Brightspace. Do this no later than 5 working days before the exam.
- Check your computer is working with the chosen software.
- If you need to record an exam, check that you know how the recording procedure works on your computer.
- Arrange for a quiet room for you to run the exams.

## During the Exam

- Turn your phone on mute, close your mailbox and turn off notifications on your computer.
- Check the connection is working for everyone.
- Put the student at ease.
- Ask the student to show you the room is empty and that no banned material is in sight.
- Ask students to switch off their phones.
- Ask the student to show their TU Delft student registration card (**DO NOT** record this!).
- Press **record**.
- Ask the student to state their compliance with the honour code.
- Start your timer or write down the starting time.
- Start the exam with an easy question.
- Continue the exam until you have completed your script.
- Confer privately with your colleague on the grade.
- Inform the student of the grade and give any constructive feedback you may have.
- Thank the student and end the call.
- If necessary, save the recording.
- Fill out the assessment form for filing after the exam.

## After the Exam

- Determine the final course grade of each student if you had not done so already.
- Upload all grades into Osiris within 5 working days of the last exam.
- Save all recordings on a university-approved or allocated space. See the [Security and Privacy for Oral Examinations Guide](#).
- File all grading sheets in case of appeals. Destroy after the statutory period has expired to be GDPR compliant.
- Where possible, provide each student with an explanation of their detailed score and feedback. You can easily do this for assignments in Brightspace if you used the Assignments function for students to upload

their work. In the case of a stand-alone oral examination, you can use an 'observed n person' assignment in Brightspace with the grade 'automatically on evaluation' option. [See Brightspace help on this.](#)

- Announce on Brightspace when the regular resit opportunity will be when this is known. Plan this in consultation with your programme manager
- Evaluate your question list and assignments and make notes on needed improvements for next time.

## Appendix B. Do's and Don'ts

### DO's

1. Do refer any students that say they cannot do a remote exam due to their personal situation or unavailability of a suitable space or computer to study counsellors to find a solution and ask study counsellor to keep you informed.
2. Do be considerate of others when planning your exam. These are hard times for everyone. We must all take into account each other's needs.
3. Do use rubrics or other grading sheets to grade consistently.
4. Do strive to use two examiners. It can be helpful to alternate question asking (and registering the points for given answers), manage the time, solve technical issues, and discuss and decide on student performance and grade.
5. Do post everything you email to students also as an announcement on the Brightspace page of your course. That way students can always find all the information again and not have excuses for not knowing.
6. Do inform students to keep their student ID ready at the start of the exam.
7. Do check their Student ID card before you start the oral exam.
8. Do consider using a tool with a main room and break-out rooms, like YouSeeU, or a tool with waiting rooms to reduce start up time. Have TAs invite the students, put them in the waiting room, help them with their audio and video, check their identity, and move them to your break-out room when you are available for the oral check.
9. Do use the chat function in the exam to type the question if you are concerned the student does not understand the question. Similarly, if you feel you cannot understand the student properly, ask them to do the same. This may solve any "lost in translation" or background noise problems. Inform your students of this. This may also help students with speech problems. Save the chat with the recording.
10. Do decide early on in an exam if the connection is working properly. If not try reconnecting and else postpone the exam.
11. Do allow yourself 10-15 minutes between each oral exam for overruns due to technical difficulties, finalizing grades and paperwork, bathroom breaks, and deal with other emergencies.
12. Do find a quiet room with a background that you would not mind students to see.
13. Do make sure you dress as if in the office (You do not want students to take screenshots of you looking dishevelled or in pyjamas and posting them on Instagram, do you? And yes, this has happened, so that's why it is listed.)
14. Do inform other occupants of your house that you are in oral exam sessions and cannot be disturbed. If necessary, hang a red bike light on your door that you can switch on to indicate when you are unavailable and in an exam.
15. Do put students at ease. Oral exams are very confrontational for students and many have never done an oral exam in an engineering subject, only in languages.
16. Do state at the beginning that you intend to pass the students. Students always worry that the opposite is the case and statements like this ease nerves. In their mind, an oral exam is like the Spanish Inquisition scene in Monty Python.
17. Do start with an easy question. This puts students at ease. Knowledge questions are not necessarily easy questions. Another option is to ask the student to choose the subject/learning objective that you will start with. In the case of assignments, you can ask the student to summarize the assignment to start.
18. If mentioned explicitly in the learning objectives, do also ask knowledge questions. This is a great way to check if the student knows what they are basing their assumptions on.
19. Do ask the student to reformulate the question in their own words if you are worried, they did not understand the question properly.
20. Do prompt students (and create prompts in your questions if needed) if they are stuck.

21. Do decide beforehand if prompting after a certain amount of time means you will deduct points. Be transparent about this before the exam, to allow students to prepare and perform optimally for the exam. If feasible, standardize the prompt, time to prompt, and point deduction.
22. Do create questions that focus on conceptual understanding and knowledge and let them built from there with questions such as what if and how would you this in case of ...
23. Do move on to the next topic if a student appears to blackout. You can always come back to it later. If they still do not know, then it is likely not a blackout but a lack of understanding.
24. Do have multiple levels in a question so that you can really probe the depth of a topic.
25. Do ensure that the levels of the questions do not exceed the level stated in the learning objectives.
26. Do ensure that the level of the practice questions is similar to the exam questions.
27. Do be aware of potential bias. A student who is articulated or well versed in English may not necessarily be more competent than the introvert student with an accent.
28. Do be aware of the holistic grading effect: An average student may look good after a bad student and bad after an excellent student. Stick to your rubric and grading scheme as objectively as you can.
29. Do make notes on your assessment sheet. This may help in case of appeals or if a student asks for feedback.
30. Do keep an eye on the time. Use your mobile phone timer or a separate clock next to your screen, for instance.
31. Do try and work with two examiners. It is not only best practice; it also avoids awkward silences.
32. Do try and have take-home assignments graded and their grade and feedback communicated to the students by the time of the exam and encourage students to look at what they did right or wrong.
33. Do explain how the student's grade was determined. What did they do well, what could they improve on?
34. Do arrange in conjunction with your programme coordinator a resit period at the end of the next quarter for students who failed or could not make an exam slot this time around. Communicate this as soon as possible to students after the exam.

## DON'TS

1. Don't plan more than 5 hours of oral exams per day. And have at least an hour's break after 2,5 hours and mini-breaks in between. It can be exhausting.
2. Don't let the period of examining draw out over more than two weeks. Students have to take new courses and do other exams and you also have other (better) things to do.
3. Don't let the emotions get the better of you. If in an exam you feel that a student is not answering properly or you suspect fraud, remain professional.
4. Don't record the ID check of students (Not allowed for privacy reasons)
5. Don't ask students to do calculations during an oral exam. The time is too short. If you value this, use time-limited assignments before the oral exam for the student to perform their calculations.
6. Don't give exemptions or special allowances to students by yourself. Have all students go through proper channels (study counsellors, Board of Examiners). Avoid the appearance of favouritism.
7. Don't let the exam turn into an interrogation. This can happen if you get annoyed with a student.
8. Don't be the one who does all the talking. It is the student who needs to demonstrate how well they master the learning objectives, not you.
9. Don't determine the grade by your gut-feeling. That is not transparent and can get you in a world of trouble if a student (rightfully) appeals.
10. Don't arrange other exam opportunities outside your stipulated period of examining and the resit period unless required to do so by your programme coordinator or Board of Examiners (BoE). As always, two opportunities are required, and if a student cannot take part in either, they will have to take the exam next year. Exceptions always go via study counsellors and BoE.
11. Don't forget to delete all recordings two months after grading except for those students who filed an appeal. Delete those recording two months after the appeals process has been completed. (Tip: Set calendar reminders)
12. Don't be afraid to ask the students for feedback after the exam. It gives you a feel of how they felt it went and whether nerves played a role.

## Appendix C: Rubrics

Math Performance Task	
Score	Description
4	Makes accurate estimations. Uses appropriate mathematical operations with no mistakes. Draws logical conclusions supported by a graph. Sound explanations of thinking.
3	Makes good estimations. Uses appropriate mathematical operations with few mistakes. Draws logical conclusions supported by a graph. Good explanations of thinking
2	Attempts estimations, although many inaccurate. Uses inappropriate mathematical operations, but with no mistakes. Draws conclusions not supported by a graph. Offers little explanation.
1	Makes inaccurate estimations. Uses inappropriate mathematical operations. Draws no conclusions related to a graph. Offers no explanations of thinking
0	No response/task not attempted.

Table C.1: An example for mathematics of a Holistic Rubric from Mertler, Craig A. (2001). Designing scoring rubrics for your classroom. Practical Assessment, Research & Evaluation, 7(25).

Performance Task Populations Sampling					
	Beginning 1pt	Developing 2 pts	Accomplished 3pts	Exemplary 4pts	Score
Sampling Technique	Inappropriate sampling technique used	Appropriate technique used to select sample; major errors in execution	Appropriate technique used to select sample; minor errors in execution	Appropriate technique used to select sample; No errors in Procedures	
Survey/Interview Questions	Inappropriate questions asked to gather needed information	Inappropriate questions asked to gather needed information	Inappropriate questions asked to gather needed information	All pertinent questions asked; data on sample is complete	
Statistical Analyses	No attempt at summarizing collected data	Attempts analysis of data, but inappropriate procedures	Proper analytical procedures used, but analysis incomplete	All proper analytical procedures used to summarize data	
Communication of Results	Communication of results is incomplete, unorganized, and difficult to follow	Communicates some important information; not organized well enough to support decision	Communicates most of the important information; shows support for decision	Communication of results is very thorough; shows insight into how data predicted outcome	
<b>Total Score</b>					__pts

Table C.2: an example of an Analytical Rubric from Mertler, Craig A. (2001). Designing scoring rubrics for your classroom. Practical Assessment, Research & Evaluation, 7(25).

Score	Description
5	Demonstrates a complete understanding of the problem. All requirements of the task are included in response.
4	Demonstrates a considerable understanding of the problem. All requirements of the task are included.
3	Demonstrates a partial understanding of the problem. Most requirements of the task are included.
2	Demonstrates little understanding of the problem. Many requirements of the task are missing.
1	Demonstrates little understanding of the problem. Many requirements of the task are missing.
0	

Table C.3: Holistic Rubric Template from Mertler, Craig A. (2001). Designing scoring rubrics for your classroom. Practical Assessment, Research & Evaluation, 7(25).

	Beginning 1pt	Developing 2pts	Accomplished 3 pts	Exemplary 4pts	Score
Criteria 1	Description reflecting beginning level of performance	Description reflecting movement toward mastery level of performance	Description reflecting movement toward mastery level of performance	Description reflecting movement toward mastery level of performance	
Criteria 2	...				
...					
<b>Total</b>					

Table C.4: Analytical Rubric Template from Mertler, Craig A. (2001). Designing scoring rubrics for your classroom. Practical Assessment, Research & Evaluation, 7(25).

## Appendix D: Example of a Face-to-Face Oral Exam

*This example from a colleague at TU Delft contains a good example of the level of information you should give to the students for an oral exam as well as an example of a grading sheet. Imbedded in student communication is also a sample of the type of questions and the grading rubric used. As you can see, it is detailed but also still very pragmatic. Keep it simple is the motto.*

### D.1: Student communication

There will be an oral examination. This examination will take one hour, or slightly more if required.

#### Registration

Appointments for the examinations have to be made via the list next to the secretariat XX, room YY. For questions, you can contact person A (Mo-Th). When making an appointment, you have to hand in your hard-copy exercise. This means that you cannot make an appointment before you have finished the assignment. Examinations are in principle scheduled on Wednesdays with one of the following persons:

- dr.Clever
- ing. Smart
- ir. Innovator

In February and March, additional examination slots will be made available when the scheduled slots are full.

#### Important

**When you wish to withdraw from an examination (or when you don't show up), it is only possible to make a new appointment after a waiting period of one month. This means that you cannot make an appointment for a period of four weeks after withdrawal or a no-show. It is therefore impossible to withdraw and to immediately make a new appointment. Changing an appointment is not possible, you only can withdraw, wait a month, and come back for making a new appointment.**

Prepare yourself well for the examination. Our experience is that students who have used less than three weeks of preparation time usually do not pass the exam. Note that it is an open book exam, except for the formulas from the first and last page of the book have to be known by heart.

#### Language

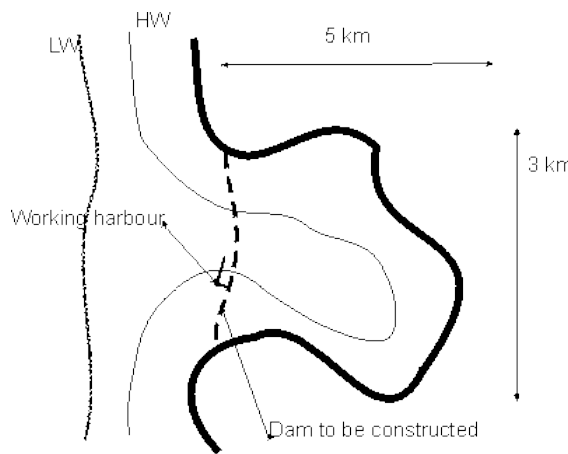
For this subject, lectures are taught in English. All study material is available in English. Examinations for this subject are oral and are either in Dutch or in English. In case a student wants to do the exam in Dutch, (s)he has to know Dutch professional terms. A list of terms is available.

#### Structure of the exam

The examination usually starts with a discussion on the exercise. You'll get feedback on the exercise, and you can correct minor mistakes you made in the exercise. After this, a case is given and a number of questions will be asked related to this case.







For example, we look to a small bay for which closure plans exist. What kind of boundary conditions are needed to make the design for such a closure (water levels, waves, dimensions, soil conditions)? And where to find these data (both in the Netherlands as well as abroad). When observations are needed, what kind of observations? Accuracy, duration, frequency of measurement?

In case wave data are needed, where do you find them? (using wind?). How do you do this?

When at the end of the closing operation there is only a small gap, what will be the effect on the bed? Is that a problem? If yes, how to solve this problem?

How do you determine the boundary conditions for the bed protection (size of the stone, dimensions of the area to be protected)? How do you calculate the stability of a stone in the bed? What is the essential difference between the approach of Shields and Izbash in this respect? Which formula is to be preferred in this case? In case you use Shields, what is the Shields parameter? Explain the method of computation of a stone size with Shields, what is the meaning of  $u^*$ ?

Could I place the rock, as calculated above, directly on top of the sand soil? If not, what should be in between? Determine intermediate rock sizes? Is geotextile an option? How to place geotextile on the bed of the gap?

Why do I want to know the depth of the erosion hole? This depth is a function of what? How important is time?

What is the freeboard of the dam; Should I use a run-up or an overtopping criterion? What is the effect of the steepness of the slope?

In the small working-harbour, you intend to unload rock. Does the bed of this port need protection? How to design such protection?

When the dike is closed and the inner water level is higher than the outer water level, what is the most relevant failure mechanism in that case? Where is the exit point of the water, what is the exit angle? How do you call this?

On the dike, I make a protection with blocks. How do I determine the stability of these blocks? What is leakage length? Discuss the permeability of the top layer and the filter layer.

When I don't use blocks but riprap, what would be the cross-section of the protective layer? How do you design the weight of the stones? Explain the differences between Hudson and Van der Meer.

When designing a filter under the dam, how do you do this? How do you determine the sizes of the stones? Explain the difference between geometrically open and closed filters, and what type is to be preferred here? Explain the filter rules using a graph. How do you order stones from a quarry, with other words, how do you specify the stones? Is a geotextile an alternative? What kind of geotextile is to be preferred in this case? What are the most important properties of the geotextile to look at?

This is of course only an example. The examination may take a completely different course because the questions are a response to your answers. Depending on the way the discussion develops, we might also discuss a second case. As you see, it is not strictly needed to derive equations or reproduce equations. It is an open book examination, but it is required to know the most relevant formulae (see reminders). When discussing formulas, you have to be able to explain the parameters of the formula and indicate which are the most relevant parameters.

### Grading and Learning Objectives

You are graded for each topic that is discussed during the oral exam based on the level of understanding that you reach, and the ability to apply that knowledge. This is given in the table below (roughly, each item represents 0.5 points):

Criterion (ordered on adapted Bloom's levels, with the highest levels on top)	BBSP Level
identify relevant (failure) mechanisms for a certain case	(very) good (8-9 / +)
identify appropriate (more elaborate) tool / formula to describe a certain process	
analyse the (physical) background of the formula	
identify the shortcomings of the formula/tool	sufficient (6-7 / 0)
make a first rough estimate of main dimensions in a design	
discuss the influence of constructability in the design	
apply the formula	
explain the most influencing variables in these formulas	
reproduce relevant rules of thumb	Insufficient (5 / -)



Your base grade is based on the average of the grades for three items that are always discussed:

- Exercise (and discussion on it)
- Bed stability under flow
- Slope stability under waves

All these items should have the pass level. This grade can be altered based by + or 1 one point based on your performance of all the other topics that are in the book:

- Turbulence
- Near-shore wave theory
- Overtopping
- Scour
- Porous flow/heave
- Stability under ship's waves
- Grass
- Env. friendly bank protection
- Failure probability
- Filters
- Fascine mattresses (zinkstukken)
- Materials (e.g. gabions, gradings, geotextile)
- Scaling rules



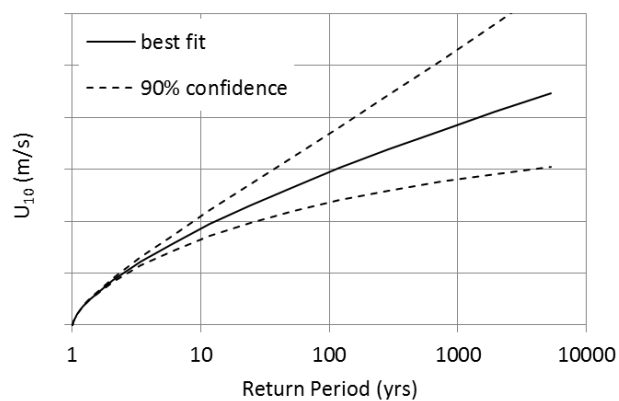
## D.2 Take-Home Assignment

Note: the pragmatic way in which the lecturer has varied the input parameters based on their student number to combat fraud! This is of course just the assignment. Do not forget to add the procedure regarding the completion and the hand in, what the deadline is, and when the student will receive feedback.

A shipping channel crosses a wide lake. The bank protection needs to be dimensioned for the wave attack.

The bank has a 1:1.5 slope angle. The wind statistics for wind in the direction of the bank are available from a nearby weather station. The wind velocity  $U_{10}$  follows a Weibull distribution ( $R = \exp((U_{10}/l)^k)$ ), where R is return period in years,  $k = 1.5$  is a shape factor, and  $l$  (m/s) a scale factor. The lake is wide so that the blocking factor of the ships is negligible. The maximum allowed velocity of the ships is 20 km/h.

Your assignment is to determine the size of the armour needed to protect the bank for this location. A deterministic and a



probabilistic design calculation are required. The only loads you have to consider are the wave loads. Also, sketch the thicknesses of the (filter) layer(s) needed to protect the sandy bank. The values for the input parameters depend on your student number. The numerical input for this exercise is given in the table below. Furthermore, you can assume standard and logical values for any unknown parameters.

student number, # digit	parameter	If value of digit = 1,2,3	If value of digit = 4,5,6	If value of digit = 7,8,9,0
3 <sup>rd</sup>	scale factor, $l$ (m/s)	5	5,5	6
4 <sup>th</sup>	distance ships to bank, $s$ (m)	100	150	200
5 <sup>th</sup>	depth (m)	10	15	20
6 <sup>th</sup>	width lake (m)	1000	1500	4000
7 <sup>th</sup>	life time (yrs)	10	30	50
7 <sup>th</sup>	type of armour	if the digit is even: rock is used if the digit is odd: a block mattress is used		

Table 1. Input parameters for the calculation.

For the probabilistic approach, you need to assume distributions and determine several averages and standard deviations. Some of these can be found directly, but for others, you have to make assumptions. You should find a good argument for your assumptions. Look to published graphs where measured data are included. Realize that also laboratory tests (and the formulas derived from them) do not result in exact answers and that the tested situations do not resemble reality exactly. For a probabilistic calculation, you need a required failure probability. Choose an acceptable failure probability, and explain why you choose it.

If your problem has multiple failure mechanisms, you can formulate a limit state function for each failure mechanism (E.g.  $Z_1$  and  $Z_2$ ), and implement the failure by taking the minimum of those, E.g.  $Z = \min(Z_1, Z_2)$ .

You can make the probabilistic calculations with the provided program Prob2B (or any other method you choose). This program can be downloaded from [www.dicea.nl](http://www.dicea.nl) (or [www.kennisbank-waterbouw.nl](http://www.kennisbank-waterbouw.nl)) via the "software" page. There you also find a 2-page manual for this program. Note that for installation on your computer, you need administrator rights and Java. In the 2-page manual, you will find both installation instructions as well as instructions on how to run this program. As an example, the Van der Meer equation is used; you may also load into the program the file vdMeer (using file-load) that gives the input for the Van der Meer model. In the zip-file, an extended manual for this program is also included.

First, make a deterministic design calculation (by "hand"). Then make a calculation using both a Monte Carlo approach as well as and FORM approach. Explain the difference in results between the probabilistic and the deterministic calculation.

One aspect in the calculations is the inaccuracy of the answer in consequence of the inaccuracy of the different coefficients. We would like to decrease this inaccuracy. Give, based on the probabilistic calculations, a suggestion which uncertainties should be improved. Also, discuss how you could accomplish this, and what you might gain with improved accuracy.

You have to hand in a short report on your findings when making an appointment for your examination. Therewith, the exercise will be a good self-evaluation of the knowledge you have and serves as a means to obtain experience with applying (some) the formulae in the book. The results will be discussed as part of the oral examination (this will take approx. 15 minutes). In this discussion, some small errors that might have been discovered during further study can orally be corrected.



### D.3 Grading Sheet

Note: This is a pragmatic rubric. Make what works for you as long as it is clear for your fellow examiners and your students!

<b>Grading sheet oral exam Bed, Bank, and Shore Protection - CIE4310</b>										
Examinator	B	C	G	M	J					
Name student										
Student number	234523654									
Date (dd-mm-yy)	27-7-2018									
<b>Final Grade</b>	<b>7.5</b>									
Grade exercise:	7,0	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%; padding: 2px;">insufficient (5 / -)</th> <th style="width: 25%; padding: 2px;">sufficient (6-7 / 0)</th> <th style="width: 25%; padding: 2px;">(very) good (8-9 / +)</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">can: - reproduce formulas</td> <td style="padding: 2px;">can: name most influencing variables - apply the tool to the case - influence of construction on design - main dimensions of the design - identify the shortcomings of tools</td> <td style="padding: 2px;">can, for a specific case: - analyse background of the tool - identify appropriate tool - identify relevant mechanisms</td> </tr> </tbody> </table>			insufficient (5 / -)	sufficient (6-7 / 0)	(very) good (8-9 / +)	can: - reproduce formulas	can: name most influencing variables - apply the tool to the case - influence of construction on design - main dimensions of the design - identify the shortcomings of tools	can, for a specific case: - analyse background of the tool - identify appropriate tool - identify relevant mechanisms
insufficient (5 / -)	sufficient (6-7 / 0)				(very) good (8-9 / +)					
can: - reproduce formulas	can: name most influencing variables - apply the tool to the case - influence of construction on design - main dimensions of the design - identify the shortcomings of tools				can, for a specific case: - analyse background of the tool - identify appropriate tool - identify relevant mechanisms					
Grade bed stability under flow	8,0									
Grade slope stability under waves	8,0									
	9	rubble mound								
		placed block revetments								
	7	asphalt								
<b>Background knowledge other topics</b>										
empty: not discussed	Turbulence	-								
+ : answered well	Near-shore wave theory									
0 : answered reasonably	Overtopping									
- : answered insufficiently	Scour	+								
	Porous flow / heave									
	Stability under ship loads									
	Grass									
	Env. friendly bank protection	-								
	Failure probability	0								
	Filters	-								
	Fascine mattresses (zinkstukken)									
	Materials (e.g. gabions, gradings, geotextile)									
	Scaling rules									
<b>Remarks:</b>										

## Appendix E Template Grading Sheet Remote Oral Exam

Grading Sheet	[Course Name]	Exam Date:	[DD-MM-YYYY]
Student Number:	[1234567]	Student Name:	[Initials + Name]
Examiner 1:	[Initials + Name]	Examiner 2:	[Initials + Name]
Student Registration Checked	<input type="checkbox"/> Yes <input type="checkbox"/> No	Procedure Discussed	<input type="checkbox"/> Yes <input type="checkbox"/> No
Honour Pledge Given	<input type="checkbox"/> Yes <input type="checkbox"/> No	Session Recorded?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Final Grade	[Grade]	Uploaded in Osiris on:	[DD-MM-YYYY]
Put your Rubric/Marking Scheme Here			
Comments/Notes			

