



Universiteit Utrecht

Course manual Bachelor's thesis Chemistry (SK-BTHESIS) 2022-2023



Course coordinator:	Syl Blad (s.blad@uu.nl)
Number of EC:	15
Level:	3
Period and timeslot:	own period of choice, timeslot ABCD

Index

Place in the curriculum.....	2
Assumed prior knowledge.....	2
Entry requirements	2
Brief course content	2
Course aims	2
Study materials.....	3
Programme and schedule	3
Attendance and active participation requirements	5
Agreements in case of online education.....	5
Feedback, evaluation and assessment.....	5
Right of inspection.....	6
Fraud and plagiarism	6
Course changes since last year.....	7
Appendices	7

Place in the curriculum

The Bachelor's thesis is an aptitude test for the future researcher. The student carries out research and writes and presents a report. During the bachelor each student has had the opportunity to practice sub-skills, such as experimenting, writing a report and giving a presentation. These skills will be further refined during the Bachelor's thesis and ultimately assessed.

If during your study certain skills were assessed as well (or if you practiced them less often than you would have wanted) it is possible to take some additional skills training at the [Skills Lab](#), which offers free coaching on academic writing, among other things. The online academic writing training as offered during the elective course Research Project Debye/Bijvoet is also available for all thesis students in this course - more on this further on.

Assumed prior knowledge

It is possible that certain sections/research projects will request the student to have certain prior knowledge, e.g. certain bachelor courses that must have been completed before starting the thesis there. Ask the supervisor(s) about any knowledge requirements early on.

Entry requirements

Students must have obtained at least 120 EC from the Bachelor's program in order to register for the Bachelor's thesis. Besides these 120 EC there are no general requirements in terms of level or content.

Brief course content

The Bachelor's thesis comprises independent research, which the student carries out within a section (research group) of the Department of Chemistry or at another institution where he/she can do comparable research. The student works individually on a research project under the supervision of a staff member of the section. The results of this research will be processed in a Bachelor's thesis and presented to the members of the section.

Course aims

The objective of the Bachelor's thesis is the completion of the academic education at bachelor's level in the field of chemical scientific research. The successful completion of the thesis indicates that the student (to a limited extent autonomously) is able to:

- acquire knowledge in order to solve complex chemical problems, both individually and in a team;
- translate a scientific problem into an experimental research plan, implement the plan and analyze and interpret the results in relation to the relevant literature;

- handle laboratory equipment and chemical materials safely, professionally and responsibly.

In addition, it shows that the student is able to:

- critically analyze, interpret and evaluate the scientific literature and other data resources as selected by him- or herself;
- communicate in a professional context on his/her area of expertise, orally and in writing, in both Dutch and English;
- reflect critically on their own and others' actions in a professional context in order to improve his/her (and their) contribution;
- reflect critically on the social and ethical consequences of chemical research and can substantiate his/her opinion with arguments

Study materials

This course has no general mandatory study materials. Possibly the thesis supervisor will recommend certain materials.

Recommended: Dean, J.R et al., Practical Skills in Chemistry (2017, 3rd ed.), Pearson Education Ltd., Harlow, UK: Chapter 7 on project work and chapters 67, 68 and 70 on presenting and reporting.

In the optional Research Project Bijvoet/Debye course, students take the online Academic Writing course. Students who have taken this course may want to check again the essential points in scientific writing. Students who have not taken the course are advised to look through the online course below and determine for themselves which topics are relevant to practice.

You can access this online Academic Writing Course on the Life Long Learning platform of the UU: <https://ulearning.uu.nl/enrol/signup/?l=kakKBCw7ptBx>

Programme and schedule

The student is expected to arrange his/her own thesis internship at a research group. Most students do their thesis work in year 3, period 4, but if the research group agrees students can also schedule it in a different period, as long as the requirement of at least 120 EC is met.

The Bachelor's thesis has three important phases: preparation - implementation - completion.

Preparation

In addition to the information on the Bachelor's thesis found in this course manual, information is also provided during the Study Career Counseling (SLB) meeting at the beginning of the third year, as well as during the Proton section information evening in November.

The student **him-/herself** is expected to contact the section where he/she wants to conduct research in a timely manner. Information about research groups can be found on [Bijvoet Center for Biomedical Research](#) or [Debye Institute for Nanomaterials Science](#). Proton has [listed the sections on their site](#) and has added a section booklet there with descriptions and thesis experiences from students.

Note: Students must contact the section early in advance, as sometimes places are limited.

Doing the thesis at a department other than the Chemistry department can be an option, but requires even more initiative and preparation. It must be clear in time whether the thesis can be carried out at a different department. To this end, points 1 and 2 must be taken care of by the student well on time:

1. Is the daily supervisor and/or second examiner of the other department able to meet the conditions as stated in this course manual? Consider the length of the internship (**8 weeks of full-time practical work**) and the requirements as set out in both contract and assessment form (rubrics).

2. Is an examiner available at the Chemistry Department who can confirm the required chemical level of the proposed thesis work at the other department before the start, and who can assess the thesis work afterwards?

Before the start of the research period for your thesis, you fill out a contract together with your supervisor in which you determine a number of things, such as working hours, supervision and assessment. **The student should send this [contract](#) as a PDF document to science.chem.ba@uu.nl with cc. to thesis coordinator Syl Blad, s.blad@uu.nl**, in order for Student Desk (Studiepunt) to enroll the student for the sk-bthesis course in Osiris and Blackboard.

Please note: the student must ensure that Student Desk receives the contract on time so that the student can be registered by the Student Desk for the course SK-BTHESIS and the student gets access to the SK-BTHESIS Blackboard site - in any case before the thesis supervisor sends the assessment form (see below) to Student Desk.

Implementation

The Blackboard website contains valuable information for during the thesis, including the rubrics for the three components of the course: report, practical work and presentation. These rubrics give a clear indication of what is expected of the student during the course.

In addition, Blackboard contains links to the online Academic Writing Course on the Life Long Learning Platform of the UU. This course, which is also used for the second-year Research Project, contains a lot of information and training material for writing your report.

Blackboard also contains an explanation of *the lay summary*. It is important to be able to explain research to people from different backgrounds, e.g. when writing to funds, or when applying for a job. Third parties are also curious about the (possible) social and/or ethical impact of the research in a broader context. For that reason, a lay summary has recently been added as a mandatory part of the report.

Completion

For the definitive feedback on the student's performance, and for the final assessment, **rubrics** are used in an assessment form. After signing, the **examiner** sends this [assessment form with rubrics plus the Urkund plagiarism report](#) as a PDF document to Student Desk, science.chem.ba@uu.nl. In order to graduate before September 1st, it is important that **the grade is entered into Osiris before August 15th**.

Note: To complete the Bachelor's thesis, the **student must** complete the **Caracal curriculum survey of the course SK-BTHESIS**. This survey concerns the Bachelor's program as a whole and the thesis in particular. The student indicates to the supervisor that the survey has been completed so that the supervisor can tick off this (mandatory) point on the assessment form.

The Bachelor's thesis is **not** published by default, this cannot be changed by students. It is however possible to publish a bachelor's thesis. In order to publish a bachelor's thesis mention the examiner has to tick 'yes' to this question on the assessment form.

When the bachelorthesis has been completed and approved, the **student** must upload the final version in Osiris. This is **mandatory**.

- As soon as your assessment form has been sent to Student Affairs, you will receive an invitation from them to upload your thesis in Osiris Case
- Alternatively, go to [Osiris Student](#) and choose *Archive & publish thesis*.

The thesis will remain in Osiris for 7 years. Read more about [archiving and publishing within the UU](#) or about [thesis & privacy](#).

Attendance and active participation requirements

Each student is expected to participate actively in the course for which he is registered. Unless otherwise stated, the minimum requirement for each course is that a student participates in all required tests and meets all deadlines (EER/OER 4.5.2).

The student makes agreements with the supervisor about attendance, how to act in the event of absence due to force majeure and about the consequences of not meeting the agreed attendance obligation (without there being a force majeure situation).

Due to the Corona measures, house rules apply in the buildings:

<https://students.uu.nl/en/practical-information/corona-and-education/house-rules-in-buildings>

Should Corona measures become such that practical work in the lab is further restricted or no longer possible, examiners will review per case if a switch to theoretical work and online education is possible, or whether the thesis student will experience a delay because of the interruption of the practical work.

Agreements in case of online education

In general, active participation in online education means that the student complies to the agreements that are made regarding online education. The student is expected to own a laptop/pc with functioning microphone and camera and well-functioning internet access. And the student is expected to have a quiet workplace in order to participate in online education. If any of these things are a problem, the student should contact study advisor.

Lecturers determine whether to record (parts of) online education. Only after explicit prior permission from the lecturers in question can a student make recordings for his or her own use, otherwise not.

N.B.: Lecturers cannot obligate their students to turn on their camera and microphone. Active participation is also possible via the chat functionality. The chat functionality can, for example, be used when students do not want to be recorded via vision and/or sound.

Feedback, evaluation and assessment

In the contract at the start of the thesis, thesis supervisor (s) and student make agreements on interim evaluations. There are three sub-grades to the assessment: practical work (60%), report (30%) and presentation (10%).

Note: Writing the report is very similar to writing a scientific article. The exact requirements that need to be met by the report are determined by the thesis supervisor(s). Please, inquire about these requirements early on.

Partial results are not rounded. The final grade is rounded to a maximum of 1 decimal, with the exception of grades between 5 and 6, in which case no decimal points are assigned and the grade is rounded either to 5 or 6. The final assessment is sufficient if the average weighted and rounded final grade is at least 6,0 and all partial results are at least 5,0.

The Bachelor's thesis has to be completed with a sufficient final grade before the end date as determined in the contract. If parts have to be retaken after the end date, the thesis supervisor will make new agreements on this with the student. After the end date and until the retake final grade can be determined, the thesis supervisor will let the Student Desk know of the retake by asking them to register AANV, science.chem.ba@uu.nl.

For the definitive feedback on the student's performance, and for the final assessment, **rubrics** are used in an assessment form. After signing, the **examiner** sends this [assessment form with rubrics plus the Urkund plagiarism report](#) as a PDF document to Student Desk, science.chem.ba@uu.nl. In order to graduate before September 1st, it is important that **the grade is entered into Osiris before August 15th**.

If the student has fulfilled all obligations to perform to the best of his or her ability during the course, as long as the final (failing) mark is at least a four or AANV, he will be given a once-only opportunity to sit an additional or substitute test. (EER 5.5.1).

A student will not qualify for an additional or substitute test if he/she has been awarded a pass (EER 5.5.2).

Partial tests and assignments that were passed will lose their validity (after the end of the academic year) if the course within which they were taken was not passed (EER/OER 5.10.3). Exceptions: the period of validity of partial results of practicals and for partial results of academic activities (writing assignments, presentations, etc.) is unlimited. In addition, if the student misses out on mandatory practicals during a course due to circumstances beyond his/her control, which can only be taken again the following academic year, the results of the partial tests of the relevant course remain valid for two years (EER/OER 5.10.3 - Appendix Chemistry).

See the digital study guide for more comprehensive information on regulation regarding assessment: <https://students.uu.nl/beta/scheikunde/praktische-zaken/regelingen-en-procedures>

Lecturers decide to hold a test (e.g. the presentation) physically on the campus, because the material cannot be tested well at a distance and/or online. Students are expected to be present at the location in order to make the test. If the Corona circumstances get worse and a test on campus is not possible, the test may be postponed to another time on campus, or the test may still be transformed into an online test at a distance. In case of an online test at a distance due to Corona restrictions (e.g. the presentation), an instruction on how to make the test will be shared with the student in advance.

When a student can not or will not come to tests or obligatory classes on campus at all, for example due to fear of Corona, or because the student is abroad and cannot come to the Netherlands, the student needs to contact the study advisor (studieadviseur.chem@uu.nl) and the exam committee (science.excie.chem@uu.nl).

When a student cannot come to a test (e.g. the presentation) on campus due to quarantine obligations, the student should follow the procedure above for absence at a test. The student retains the right on a first exam opportunity (as well as on an additional or substitute test). If possible, the lecturers (concomitantly) offer the opportunity to take the exam online. If this is not possible, the student will take the exam at a later point in time. An alternative can be offered at another time on campus, or online.

See also: [Rules for absence during corona - Science - Students | Universiteit Utrecht \(uu.nl\)](#)

Right of inspection

For at least twenty working days after announcement of the result of a written test, the student will be allowed to inspect his or her marked work upon request and in a manner to be determined by the course coordinator (EER 5.11.1).

Fraud and plagiarism

Fraud and plagiarism are defined as an action or failure to act on the part of a student, whereby a correct assessment of his knowledge, insight and skills impossible, in full or in part (EER 5.14.1). For

examples of fraud and plagiarism, see:

<https://students.uu.nl/praktische-zaken/regelingen-en-procedures/fraude-en-plagiat>

In all cases where fraud or plagiarism is found or suspected, the examiner will inform the student and the Board of Examiners of this in writing. The Board of Examiners will give the student the opportunity to respond to that in writing and to be heard (OER 5.14.2).

Course changes since last year

Thankfully we were able to offer almost all students a thesis position at the lab in 202-2021. As long as the 1,5 distancing rule holds in 2021-2022, places in the labs will be tight and students are advised to consider doing there thesis in another period than period 4, if possible.

Appendices

Contract Bachelor's thesis - Assessment form plus Rubrics – instruction Lay summary.

CONTRACT BACHELOR THESIS

Personal information			
Name			
Student number			
Telephone		E-mail:	@students.uu.nl
Daily supervisor information			
Daily supervisor (name and title)			
Department/Division			
University			
Telephone		Email:	
Also examiner?	Yes/no	Completed supervision instruction?	Yes/no
Examiner 1 information			
Examiner¹ (name and title)			
Department/Division			
Telephone		Email:	@uu.nl
Examiner 2 information - if applicable			
Examiner¹ (name and title)			
Department/Division			
University			
Telephone		Email:	
Research project information			
Title			
Period	From:	till:	ECTS:
Signatures of all parties			

Signature of student	Date: Student:	
Signatures of supervisors	Date: Daily supervisor: Also examiner? Yes/No	Date: UU Examiner appointed for Chemistry ¹ :
Signatures of supervisors	<i>If applicable: Date: Outside 2nd examiner (not appointed for UU Chemistry): /or: 2nd examiner for UU Chemistry in case daily supervisor is not so appointed:</i>	

All parties agree to the following:

Presence	
Working hours	Ca. 8 hours, 5 days a week/
Holidays	
Absence daily supervisor	
Compulsory Products	
Project outline	Yes/No
Report	Yes/No
Presentation	Yes/No
Deadline Report	Report to be handed over before (max 10 weeks after end date research) Date:
Other products?	
Guidance	
Frequency	Once every two weeks/Once every week/
Evaluation (dd/mm/yy)	
1. Project outline	
2. Midterm (to discuss progress and guidance)	

¹ In the case of thesis work done outside of the department of Chemistry, the contract is not complete without a signature (=the approval for proposed thesis work) from an appointed UU examiner for Chemistry. When going outside of the Netherlands for thesis work, students are obliged to register this in Osiris. Please contact the Science International Office to register, science.internatoff@uu.nl.

3. Final									
Copyright									
<p>Student and Supervisor agree that the copyright of the bachelor thesis is reserved</p> <ul style="list-style-type: none"> • to the research group: yes/no • to the student: yes/no <p>No parts of the bachelor thesis may be reproduced, restored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise without the prior permission of the research group.</p>									
Plagiarism									
<p>Student and Supervisor agree that the student or supervisor submits the report for a plagiarism check: https://student.ephorus.com/students/https://urkund.sites.uu.nl/</p>									
Assessment (weighing)									
Assessment	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">a: Practical work</td> <td style="width: 25%; text-align: center;">b: Written report</td> <td style="width: 25%; text-align: center;">c: Presentation</td> <td style="width: 25%; text-align: center;">d. Other</td> </tr> <tr> <td style="text-align: center;">60%</td> <td style="text-align: center;">30%</td> <td style="text-align: center;">10%</td> <td></td> </tr> </table>	a: Practical work	b: Written report	c: Presentation	d. Other	60%	30%	10%	
a: Practical work	b: Written report	c: Presentation	d. Other						
60%	30%	10%							
Other									
<p>If applicable student and supervisor can agree on additional issues like: literature study, lab space, desk space, lab rules on safety etc.</p>									

ASSESSMENT BACHELORTHESIS

Personal information			
Name			
Student number			
Telephone		E-mail:	@students.uu.nl
Daily supervisor information UU Examiner? Yes/No			
Daily supervisor <i>(name and title)</i>			
Department/Division			
Telephone		Email:	
UU Examiner information			
Examiner <i>(name and title)</i>			
Department/Division			
Telephone		Email:	
Research project information			
Title			
Period	from:	till:	ECTS: 15
Assessment* Project (grades out of 10)	a: Practical work (60%)	b: Written report (30%)	c: Presentation (10%)
	Final grade [Xa+Yb+Zc]		
<input type="checkbox"/> Plagiarism checked in Urkund by the examiner (Urkund report attached) <input type="checkbox"/> Rubrics checklist filled out by examiner (see Rubrics list below) <input type="checkbox"/> Curriculum survey Caracal sk-bthesis filled out by the student <input type="checkbox"/> Publish bachelor thesis at UU? (default = no; tick = yes – student and supervisor should agree first) <input type="checkbox"/> This project was carried out outside the UU Science Faculty under the auspices of an outside examiner at: <i>(name examiner, name group, department, faculty, university, address)</i>			
Signatures of all parties			
Signature of student	Student:		
	Date:		
Signatures of Supervisors	Daily supervisor:	UU Examiner (The assessment form is only valid when the grade is substantiated, e.g. by a filled Rubric).	
		<i>2nd Examiner (if applicable):</i>	
	Date:	Date UU Examiner: <i>Date 2nd Examiner (if applicable):</i>	

RUBRICS BACHELORTHESIS

This table serves as a backbone for giving feedback and for assessment of the Bachelorthesis course. Grading of report, the practical work and the presentation and the weighing of the various criteria is the responsibility of the supervisor together with the examiner. Guideline for grading for each of the three parts is that when the score for all criteria is sufficient, the grade should be 7. Note that simply "good" is not the highest attainable level.

Lab work	Inadequate	Sufficient	Good	n.a.
Creativity	No ideas	Commonplace ideas and expected usage	Unusual ideas and elements	
Critical attitude	Self-reflection is absent Critical attitude is absent Shows poor mastering of scientific concepts	Shows self-reflection and has critical attitude towards (published) research Shows sufficient mastering of scientific concepts	Critical attitude is based on intellectual depth and profundity Shows good mastering of scientific concepts	
Integrity	Data manipulated or left out ² Purposefully untruthful content Work by others not properly attributed	Accurate, reliable and trustworthy Shows awareness of confidentiality of information		
Perseverance, dedication	Loses motivation when experiments fail Not dedicated to the project	Repeats experiments until satisfactory results are obtained Sufficiently dedicated to the project	<input type="checkbox"/> Perseveres, but knows when to stop. <input type="checkbox"/> Takes ownership of the project	
Technical skills	Learns slowly and can only perform learned techniques with a lot of support	Learns well and can perform learned techniques with a minimum of support	Learns quickly and can perform learned techniques and new techniques (through protocols) independently	
Set-up and care for equipment	<input type="checkbox"/> Built inadequate experimental set-up, help is required with several major details <input type="checkbox"/> Many necessary supplies must be found in mid-lab	<input type="checkbox"/> Built adequate experimental set-up with several details that need refinement <input type="checkbox"/> Some necessary supplies must be searched out	<input type="checkbox"/> Built exemplary experimental set-up <input type="checkbox"/> All equipment accurately placed <input type="checkbox"/> All necessary supplies at hand	<input type="checkbox"/>
Safety	<input type="checkbox"/> Proper safety precautions are consistently missed	<input type="checkbox"/> Proper safety precautions are generally used, may need to be reminded once	<input type="checkbox"/> Proper safety precautions are consistently used; consistently thinks ahead to ensure safety. <input type="checkbox"/> Will often help other students to conduct experiments safely	<input type="checkbox"/>

² In case of fraud or plagiarism, the examiner will inform the Board of Examiners of this in writing

Data collection, lab journal	<input type="checkbox"/> Measurements are incomplete, inaccurate and imprecise <input type="checkbox"/> Observations are incomplete or not included <input type="checkbox"/> Many errors with symbols, units and significant figures are not included <input type="checkbox"/> Does not allow for repeating experiments	<input type="checkbox"/> Measurements are mostly accurate <input type="checkbox"/> Observations are generally complete <input type="checkbox"/> Work is organized <input type="checkbox"/> Only a few errors using symbols, units and significant digits <input type="checkbox"/> With some searching, experiments can be repeated on the basis of the lab journal	<input type="checkbox"/> Measurements are accurate with reasonable precision <input type="checkbox"/> Observations are thorough <input type="checkbox"/> Work is generally neat and organized <input type="checkbox"/> Includes symbols, units and significant digits <input type="checkbox"/> Experiments can be repeated readily on the basis of the lab journal	<input type="checkbox"/>
Data interpretation	<input type="checkbox"/> Has difficulties interpreting results, even after explanation	<input type="checkbox"/> With some help, can interpret results	<input type="checkbox"/> Can interpret results independently	<input type="checkbox"/>
Efficiency	<input type="checkbox"/> Poor planning of lab work	Sometimes inefficient but usually sufficient planning of lab work	<input type="checkbox"/> Good planning of lab work	<input type="checkbox"/>
Conduct in the lab	<p>Too little respect towards or knowledge of the rules applicable at the work place</p> <input type="checkbox"/> Messy work place <input type="checkbox"/> Does not clean up general work places <input type="checkbox"/> Does not report depleted materials <input type="checkbox"/> Does not communicate with colleagues.	<p>Adheres well to the rules applicable at the work place</p> <input type="checkbox"/> Cleans up work place regularly <input type="checkbox"/> Tries to keep work place neat <input type="checkbox"/> Reports when materials are depleted <input type="checkbox"/> Communicates and reckons with the needs of colleagues.	<p>Adheres well to the rules applicable at the work place</p> <input type="checkbox"/> Cleans up immediately <input type="checkbox"/> General work places are cleaned up well <input type="checkbox"/> If materials are depleted, they are quickly refilled. <input type="checkbox"/> Communicates well and reckons with the needs of colleagues.	
Computer skills	<input type="checkbox"/> Important input files are lost/overwritten and cannot be recovered. <input type="checkbox"/> Disk space completely filled, which makes the work of other users impossible.	<input type="checkbox"/> A general scheme for file organization is used. Creation of input files often requires help of the supervisor.	<input type="checkbox"/> Student understands the meaning of most of the input files and is able to create them without much help. <input type="checkbox"/> Very clear scheme for file organization is used	<input type="checkbox"/>

Report	Inadequate	Sufficient	Good	n.a
Abstract	<p>Layman's abstract incomprehensible for the general public</p> <p>Abstract is missing</p> <p>Abstract is unclear</p> <p>Abstract contains too little or information that is not relevant</p>	<p>Layman's abstract partly comprehensible for the general public</p> <p>Abstract is present</p> <p>Abstract contains sufficient information</p> <p>Abstract is clear</p> <p>Abstract contains the important elements</p>	<p>Layman's abstract comprehensible for the general public</p> <p>Abstract is present and contains all important elements:</p> <p><input type="checkbox"/> introduction</p> <p><input type="checkbox"/> background</p> <p><input type="checkbox"/> general problem</p> <p><input type="checkbox"/> main results</p> <p><input type="checkbox"/> conclusion</p>	
Introduction and research question	<p>Introduction contains too little information</p> <p>Poor overview of the literature</p> <p>Introduction does not contain a clear and focused research question</p> <p>No funnel structure at all</p>	<p>Introduction contains sufficient information</p> <p>Most information is relevant</p> <p>Sufficient overview of the literature</p> <p>Introduction contains a clear and focused research question</p> <p><input type="checkbox"/> Most aspects of the funnel structure recognisable</p>	<p><input type="checkbox"/> Introduction contains sufficient and relevant information which places the research question in a perspective</p> <p><input type="checkbox"/> Good overview of the literature</p> <p><input type="checkbox"/> Introduction contains a clear and well-focused research question</p> <p><input type="checkbox"/> Introduction encourages to read on</p> <p><input type="checkbox"/> Clear funnel structure</p>	<input type="checkbox"/>
Experimental or Materials and Methods (M&M)	<p>M&M are incomplete or too much story telling</p> <p><input type="checkbox"/> It is very difficult to repeat experiments on the basis of the reported methods</p>	<p>M&M are complete and sufficiently to the point</p> <p><input type="checkbox"/> Most experiments can be repeated on the basis of the reported methods</p>	<p><input type="checkbox"/> M&M are complete and to the point</p> <p><input type="checkbox"/> Experiments can be easily repeated on the basis of the reported methods</p>	<input type="checkbox"/>
Results and discussion	<p>Incomplete description of results</p> <p>Argumentation is lacking</p> <p>Many mistakes in the analysis and interpretation of the results</p> <p><input type="checkbox"/> Difficult to follow without figures or tables</p> <p><input type="checkbox"/> Discussion does not come back to the research question</p>	<p><input type="checkbox"/> Complete description of results</p> <p><input type="checkbox"/> Mostly correct argumentation</p> <p><input type="checkbox"/> Analysis and interpretation of results contains only a few mistakes</p> <p><input type="checkbox"/> Mostly easy to follow without figures and tables</p> <p><input type="checkbox"/> Discussion does come back to the research question</p>	<p><input type="checkbox"/> Complete and correct description of results</p> <p><input type="checkbox"/> Correct argumentation</p> <p><input type="checkbox"/> Correct analysis and interpretation of results</p> <p><input type="checkbox"/> Easy to follow without figures and tables</p> <p><input type="checkbox"/> Discussion shows a vision on the subject</p> <p><input type="checkbox"/> Discussion does come back to the research question</p>	<input type="checkbox"/>

Figures and tables	<p>Too few of too many irrelevant figures Failed to represent results correctly of representation of irrelevant data</p> <p><input type="checkbox"/> Captions lack essential information <input type="checkbox"/> No or incorrect references to figure in the text <input type="checkbox"/> No explanation of figures in the text</p>	<p>Sufficient figures Correct representation of most relevant data in clear figures and tables Most captions are correct Correct references to figures in the text Most figures are explained in the text</p>	<p>Sufficient figures, which support the text very well Well-structured and correct representation of relevant data in clear figures and tables</p> <p><input type="checkbox"/> Clear and correct captions Correct references to figures in the text <input type="checkbox"/> Good explanation of all figures in the text</p>	
Conclusions	<p>Does not come back to the research question Conclusions are not backed up by results No discussion of weak and strong points of the research</p> <p><input type="checkbox"/> Incorrect conclusion from the results</p>	<p>Does come back to the research question Conclusions are backed up by results Discusses weak and strong points of the research</p> <p><input type="checkbox"/> Largely correct conclusions from the results</p>	<p>Does come back to the research question Conclusions are backed up by results Discusses weak and strong points of the research and has clearly put thought into future research</p> <p><input type="checkbox"/> Correct conclusions from the results</p>	
Referencing	<p>No referencing or too few references Too few primary articles Most of the literature obtained from the supervisors Incorrect referencing Incomplete or untidy list of references Figures reproduced or inspired from the literature not referenced in caption³</p>	<p>Referencing to enough references Sufficient reference to primary articles The majority of references selected by the student In general correct referencing Complete and tidy list of references, only a few errors Figures reproduced or inspired from the literature referenced in caption</p>	<p>Referencing to enough references Sufficient reference to primary articles All references selected by the student Correct references in the text Correct and tidy list of references Figures reproduced or inspired from the literature referenced in caption and when relevant clearly attributed to in words</p>	
Style	<p>Style is hardly scientific Too many ill constructed sentences Too little variation in the use of words No explanation of important terms Bad punctuation</p>	<p>Style generally scientific Only a few ill-constructed or too short or long sentences Enough variation in use of words Important terms are explained Generally efficient use of punctuation</p>	<p>Style is scientific, adjusted to the target group, lively and motivating All sentences are well constructed and of the right length Important terms are explained well Correct and efficient use of punctuation</p>	
Grammar	<p>The text is hard to read due to errors in grammar and spelling</p>	<p>There are a few errors in grammar and spelling, but they do not hinder the reader</p>	<p>Only very few errors in spelling and grammar</p>	

³ In case of fraud or plagiarism, the examiner will inform the Board of Examiners of this in writing

The writing process	<p>Needed quite a lot of help to complete the task</p> <p>Responds poorly to suggestions</p> <p>Was not able to obey deadlines</p>	<p>Two rounds of feedback were sufficient to produce a satisfactory end product</p> <p>Responds satisfactorily to suggestions</p> <p>Deadlines kept satisfactorily</p>	<p>Is able to complete the task relatively independently</p> <p>Responds satisfactorily to suggestions</p> <p>Is able to conduct a good, intellectual discussion on the basis of the report.</p> <p>Good at keeping to the deadlines</p>	
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Presentation	Inadequate	Sufficient	Good	n.a.
Scientific content	<p>Unclear relevance and vaguely described aim of the research</p> <p>Research question absent, unclear or without focus</p> <p>Inadequate description of the methods and the results that were obtained</p> <p>Poor explanation the results</p> <p>No arguments used in the discussion of the results</p> <p>Conclusions do not bear on the research question or which are not supported by the results</p> <p>No reflection on weak points or implications</p> <p>Ill-adjusted to the audience</p>	<p>Relevance and aim of the research is clear</p> <p>Research question is sufficiently clear and focused</p> <p>Sufficiently clear description of the methods and the results that were obtained</p> <p>Sufficient explanation of the results</p> <p>Some arguments used in discussion of the results</p> <p>Conclusions bear on the research question and are supported by the results</p> <p>Some reflection on weak point and future research</p> <p>Mostly well-adjusted to the audience</p>	<p>Relevance and aim of the research is clear</p> <p>States a clear research question</p> <p>More than adequate description of the methods that were used and the results that were obtained</p> <p>Good description of the results</p> <p>Correct use of arguments when discussing the results</p> <p>Clear conclusions that bear clearly on the research question and are supported by the results</p> <p>Reflects on weak points and implications</p> <p>Well-adjusted to the audience</p>	
Structure	Hard to discover logical sequence	Mostly logical sequence	Logical sequence	
Time management	The presentation is too short or too long or the speaker had to rush to keep within the time limit	The presentation is of the required length, the speaker did not have to rush, but the available time could have been better distributed between the parts of the presentation	The presentation is of the required length, the speaker did not have to rush, and the available time was well distributed over the parts of the presentation	

Presenting skills	<p>Makes very little contact with the audience Has difficulty holding the audience's attention (little eye contact, distracting posture, pace too slow or too fast) Stalls heavily when a mistake is made Has difficulty speaking clearly and audibly</p>	<p>Makes sufficient contact with the audience The attention of the audience is hard to hold, fluctuates Is, given some time, able to recover after a mistake Some aspects of his speech can be improved</p>	<p>Makes good contact with the audience Is well able to hold the attention of the audience (eye contact, posture, pace of speech) Recovers quickly when a mistake is made Speaks clearly and audibly</p>	
Answering questions	<p>Has difficulty answering questions Is not able to react on criticism</p>	<p>Is able to answer most questions appropriately Reacts on criticism</p>	<p>Has convincing answers on all questions Is able to reflect on criticism</p>	
Materials	<p>No clear relationship with the content of the presentation Cluttered or difficult to read Vague figures and tables with a lot missing in the captions Too many slides, had to skip a few Referencing is missing</p>	<p>Most of the materials bear on the content of the presentation Most is good to read Most figures are clear and have clear captions Amount in accordance with the length of the presentation Appropriate referencing</p>	<p>Well-adjusted to the content and clearly supportive to the main points of the presentation Well structured, readable and clear Clear figures and tables with clear captions Amount in accordance with the length of the presentation Appropriate referencing</p>	

Explanation:

Lay summary

Lay summaries are already commonly used by researchers in many subject areas, as they encourage and increase the possibility of collaboration, and some funding bodies even require them as part of their application procedure. Writing such summaries distilling your work into a portable and maximally accessible form can bring many benefits for your wider interactions with society at large. Among other things, they are great for use in press releases or when communicating with journalists. In short: this is a communications skill worth learning.

Here are some pointers on how to write a useful lay summary:

Predict and cover the 'so what' factor - justify your research.

Give some background and context to the research. What prompted you to do it?

Follow a logical order. This may not always coincide with a temporal order.

Explain the impact of the work - what is going to change (especially in relation to wider society)?

Use succinct, short sentences and write in plain language. Pretend you are trying to explain your article to a distant family member who works in retail/fashion/hospitality.

Avoid jargon unless absolutely necessary and explain it if you do have to keep it in.

Use first person and active voice ('we agreed' rather than 'it was agreed').

Use positives not negative sentences: 'You will have repeat appointments at least once a fortnight', rather than 'The usual practice is not to schedule repeat appointments more frequently than once a fortnight'.

Images are very important - try to include one if you can.

When you think you are ready with your summary, ask a friendly non-academic to read it. Ask them if they understood it: the number of questions you get might dictate that further revision is needed!

Read more on lay summaries here:

<https://www.elsevier.com/connect/authors-update/in-a-nutshell-how-to-write-a-lay-summary>

<https://www.pnas.org/content/112/12/3585>