Study guide Bachelor's Final Project

Bachelor Applied Physics

Eindhoven University of Technology

Course code & credits:	3CBX0 (10 credits), 3CEX0 (15 credits)
Level:	Bachelor Advanced (3)
Program:	Applied Physics and Science Education
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Responsible Applied Physics supervisor:	Examiner appointed for the Bachelor's Final Project by the Examination Committee Applied Physics

Content

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1. Introduction

In **The Bachelor's Final Project (BEP)** you will get acquainted with the practice of scientific research. The BEP takes place on the TU/e campus, directly related to ongoing research within one of the research groups of the Applied Physics department. It is also possible to carry out an interdisciplinary BEP project in Innovation Space, see this webpage for more information. Under the supervision of an academic staff member, you carry out an original research project. The Bachelor's Final Project (BEP) consists of 10 ECTS (280 hours), or 15 ECTS (420 hours).

The procedure for finding a suitable Bachelor's Final Project can differ per research group or research institute, but you are responsible for finding a project of your interest. General information about the research groups and the corresponding projects, can be acquired by attending the STOOR Bachelor's Final Project information session, and via the Applied Physics Marketplace Canvas page.

2. Learning outcomes of the Bachelor's Final Project

After executing the Bachelor's Final Project, you have learned to apply knowledge and skills to a research, engineering and/or design challenge in the domain of Applied Physics. You have gained experience in participating and collaborating in a mono- or multidisciplinary academic team at TU/e, within a research group or institutes connected to the department of Applied Physics, or within university teams involving researchers at the department Applied Physics.

After finalizing the Bachelor's Final Project, you are able to:

- Formulate a research question on a basic scientific level.
- Interpret scientific literature about the research topic and put the research project in context.
- Iteratively set up, organize and perform an experimental and/or theoretical scientific project.
- Carefully handle and present data, investigate, critically interpret and formulate the results and conclusions.
- Clearly communicate about the Bachelor's Final Project on a basic specialist level, both orally (presentation and discussion in the group) and in written form (report).
- Organize and plan a project within an academic team and reflect on the process including consequences of decisions made during the project.

3. Assessment of the Bachelor's Final Project

The assessment of your Bachelor's Final Project involves three components. There is the actual work you performed during the project (weighted by 40%), and in the final phase you deliver the report (40%), and a presentation (20%). The assessment of professional skills is embedded in the abovementioned three components. Your project will be assessed according to the rules mentioned in the Bachelor's Final Project Assessment Protocol.

4. Planning a 10/15 credits Bachelor's Final Project

You can either carry out a Bachelor's Final Project of 10 credits or 15 credits, depending on how you have designed your own study program for the Bachelor Applied Physics. The Bachelor's Final Project needs to be finished in a predetermined and fixed time period. By choosing a 10 or 15 credits Bachelor's Final Project, you determine the timeline and the end date of the project, according to the following rules:

- For a 10 credits (short) Bachelor's Final Project, an effort of 280 hours is expected (an equivalent of 7 weeks of full-time, 40 hours work per week).
- For a 15 credits (long) Bachelor's Final Project, an effort of 420 hours is expected (an equivalent of 10.5 weeks of full-time, 40 hours work per week).
- When needed, you are allowed to use a limited amount of extra time to finalize the Bachelor's Final Project. For both a 10 and 15 credits project, you receive 120 hours (or 3 weeks of full-time work) allowed extra time.

When planning your Bachelor's Final Project, you and your supervisor should keep (public) holidays into account, also for the allowed extra time. When needed, you can also distribute the workload over a longer period (part-time work), but keep in mind that this can cause study delay. Before filling in the registration form and starting your project, you should discuss your final planning with your responsible Applied Physics supervisor, and if applicable also with the daily supervisor. Together you come to an agreement on the start and initial end date, as well as the end date including allowed extra time of the project based on the regulations mentioned above. The end date of the Bachelor's Final Project includes the submission of the BEP report and delivering the presentation.

By filling in the start- and initial end date, and the end date including the allowed extra time on the registration form of the Bachelor's Final Project, you agree together with your supervisor that there is the commitment that the project is completed by these dates.

5. Monitoring process of the Bachelor's Final Project

Near the initial end date of the project as indicated on the registration form, it is expected you finalize your Bachelor's Final Project. If this seems not feasible anymore, you automatically use your allowed extra time (see chapter 4) after confirmation from your Applied Physics supervisor.

5.1. Retake

In case the project has been graded with a final grade <6.0, or one or more criteria (''Report, ''Presentation'', ''Implementation of the work itself'') are graded <6.0, if the level of the project is substandard or if the report cannot be handed in 5 working days before the end date including allowed extra time, the Bachelor's Final Project will be graded with an insufficient grade.

In that case a retake is offered. Together with your responsible Applied Physics supervisor you will agree on what actions need to be taken in order to improve the project, e.g. by optimizing the report and/or by delivering the presentation again. For both 10 and 15 credits Bachelor's Final Project the time allocated for the retake is at most 120 hours (an equivalent of 3 weeks of full-time, 40 hours work per week). The end date of the retake is determined by the student in consultation with the responsible Applied Physics supervisor. The start and end date of the retake is communicated to CSA-AP by the responsible Applied Physics supervisor.

An extension of the retake is not possible. If by the end date of the retake the report is not handed in, the Bachelor's Final Project will be graded with a definite insufficient grade. In general, a new project should be started.

5.2. Personal circumstances

If personal circumstances will cause a delay, you and your responsible Applied Physics supervisor should get in contact with the BSc. academic advisor. You can discuss whether continuation of the current project would be a feasible option. When there is a possibility for continuation of the project, new

agreements regarding the throughput time of the project need to be made and communicated to the education coordinator.

Permission for longer extension can be asked to the Examination Committee in certain conditions comparable to those mentioned in Appendix 2 to Article 1.3.3, paragraph e, of the Regulations of the Examination Committee 2022-2023. In any case the following personal circumstances must be recognized: illness, exceptional family circumstances, pregnancy and childbirth, dual career (top talent) and other situations involving circumstances beyond the student's control.

6. Guidelines Bachelor's Final Project report and presentation

In the process of writing your report the interaction with your responsible Applied Physics supervisors is crucial. A checklist can be found in the appendix, to guide students and supervisors on the essential elements of the Bachelor's Final Project report. This checklist can be used at several stages of the writing process, to identify the overall progress in content and format. You must use AP format for the title page bachelor final project.

During the Bachelor's Final Project, you prepare for the (final) presentation. A checklist can be found in the appendix, to guide you on the essential elements.

7. Organization of the Bachelor's Final Project

Properly organizing your Bachelor's Final Project will take some time. Following the steps below can help you with this. It's very important that you follow these steps proactively. It is your responsibility to make sure that you arrange things in time and follow procedures accurately. Planning and organization of your project is part of the assessment process.

7.1 Preparing the Bachelor's Final Project

When?	Who?	What?
A few months before the start of Bachelor's Final Project	Student	Make sure your study program has been accepted via the PlanApp. Check the prerequisites for starting the Bachelor Final Project. Find a suitable project and responsible Applied Physics supervisor matching your interests and wishes. There are different ways to find a position: • Attend the STOOR Bachelor's Final Project information session • Take a look at the marketplace Canvas page • Contact a professor or other staff member of the research group / research institute of your interest to ask for options for a Bachelor's Final Project • For inspiration, see Research AP (tue.nl)
Approx. 4 weeks before the start of the Bachelor's Final Project	Student & responsible Applied Physics supervisor	1st meeting between the responsible Applied Physics supervisor and the student. Discuss: • The subject, scope, location and planning of the project, taking the size of the project into account (10/15 credits)
Before the start of the Bachelor's Final Project	Student & responsible Applied Physics supervisor	Student & responsible Applied Physics supervisor write a final proposal of the Bachelor's Final Project, about subject and content, scope and planning and organization.
	Student	Enroll yourself for the correct course code in Osiris

	Student	Fill in the registration form Bachelor's Final Project Applied Physics with the information as agreed upon by you and your responsible Applied Physics supervisor.
	Student	Read the assessment protocol for the Bachelor's Final Project Applied Physics.

7.2 During the Bachelor's Final Project

When?	Who?	What?
During the Bachelor's Final Project	Student & responsible Applied Physics supervisor	You work on your research project. You maintain regular contact with your responsible Applied Physics supervisor and daily supervisor about your progress, planning and development. At the project start, discuss together how you will maintain contact (i.e. face-to-face, e-mail/Teams) and with what frequency. During the project, adapt the communication when necessary. In the assessment protocol, you can find more information about the assessment criteria. The assessment of professional skills is embedded in the three assessment components, make sure to work on these skills and discuss the progress with your TU/e and/or daily supervisor. E.g. prepare and practice your presentation, reflect on the progress of the project, and how you work with colleagues/peers with your TU/e and/or daily supervisor. When you are facing a problem(s) during the project, you are in the lead to discuss this with the responsible Applied Physics supervisor, and to decide together on appropriate actions.
During the Bachelor's Final Project	Student	You work on your project and report, aiming to finalize the report at the scheduled end date. Frequently discuss the process and feasibility with your responsible Applied Physics supervisor and daily supervisor, e.g. when you share different versions of your reports, feedback and deadlines. See the checklist for report on page 7.

7.3 Finalizing the Bachelor's Final Project: report and presentation

When?	Who?	What?
At least 5 working days before the end date of the BEP	Student	Hand in your final BEP report to the first and second examiner Sign the TU/e Code of Scientific Conduct for the Bachelor's Final Project
After handing in the report	Assessment Committee	The first and second examiner will assess the report and the responsible Applied Physics supervisor will assess the implementation of the work before the presentation takes place.
End date of the Bachelor's Final Project	Student & Assessment Committee	Prepare and deliver a presentation (approx. 20 minutes, followed by a discussion of approx. 10 minutes) about your project. In the assessment protocol and in the appendix on page 10, you find more information about what the presentation should look like. The first and second examiner will assess the presentation according to the criteria in the assessment protocol.
After the presentation	Responsible Applied Physics supervisor	Your responsible Applied Physics supervisor (also first TU/e examiner), in consultation with the second examiner (presentation and report) will grade your Bachelor's Final Project on each of the grading criteria according to the rules mentioned in the assessment protocol. The responsible Applied Physics supervisor explains and

		motivates the grades to the student in a separate meeting. This will be documented in the assessment form. The final written feedback and (sub)grades will be filled in on the assessment form and communicated to you, CSA and the second TU/e examiner by the responsible Applied Physics supervisor. **The first TU/e examiner sends the assessment form, report and TU/e code of conduct for the Bachelor's Final Project.** When the assessment form is handed in at CSA-AP, your grade will be processed, and the report will be stored.
After the presentation	Student	As part of the BSc. first year Q1 course Introduction to Applied Physics in the following academic year, new first year students need to conduct an interview with former BEP students. In this way, new Applied Physics students learn about the Applied Physics program and research. If you are interested to tell students about your experiences in your BEP, it would be very much appreciated in you participate as an interviewee. In Q4, BEP students and their supervisors will be contacted.

Appendix: Checklist Report and Presentation

BACHELOR'S FINAL PROJECT – BSc APPLIED PHYSICS

CHECKLIST for REPORT

Assessment, length limit, scientific level, general recommendations

- ☐ The report will be **graded by two examiners**, the responsible supervisor, and the second examiner (both from TU/e). Other (daily) supervisors will be consulted when involved in giving feedback to your report.
- ☐ The **key assessment criteria** of your report can be consulted in the Assessment Protocol Bachelor's Final Project BSc Applied Physics. This includes all assessment elements listed under items: 1a. Introduction of research question and methods, 1b. Results & conclusion(s), 1c. Structure, style.
- ☐ The report is sufficiently compact. Without references and appendices, you should typically not exceed **20-30 pages or 10,000 words**. The length of individual sections/chapters should be carefully balanced considering their relevance and importance within the full report.
- ☐ The **scientific level of your report** should be such that typically other BSc-AP students in the research group, working on similar subjects, can basically follow the content. It can be assumed that topics and theory within BSc-AP major courses is familiar, and does not need to be repeated (see later in Main chapters / sections).
- ☐ To be able to judge the required level and other key elements of your report (as will be discussed below)**, ask your supervisor for exemplary reports**, which were delivered by other BSc-AP students. These examples may guide you in the writing process of the project.
- ☐ Before starting up the actual writing process, **discuss with your supervisor(s) the general outline and structure of your report**. This may guide you in carefully planning timely delivery of sections or chapters, including the required feedback from your supervisors and its implementation. For details on structure and chapters, see the next sections.
- ☐ Based on the outline of your report, it is strongly advised to **startup up the writing process at an early stage** of your project, to warrant sufficient progress and to prevent a too high workload at the end. Involve your supervisor in discussing the progress in your report, e.g. by identifying what sections can be written at an early stage, and how to deal with feedback and corrections.

Structure

- ☐ When you are able to identify the **main conclusions based on the core results**, the whole report should revolve around explaining and supporting this. This requires an introduction and motivation of the project, and concise background theory and experimental or theoretical tools. Then you will report on results including discussion and conclusions. This is the core of your work, and the rest of the report should support this in a direct and compact way.
- ☐ In the chosen **structure of the report**, the reader is optimally guided through all chapters of the full report. All individual chapters and sections are carefully tied together and always placed within the larger framework of the report.
- ☐ Apart from the main sections or chapters (see below: Introductory part & Main chapters / sections), the report has **four compulsory parts**. The report starts with (1) **Title page**, (2) **Summary or Abstract**, and (3) **Table of Contents**, and is completed at the end by (4) **References or Bibliography**.

- ☐ **Appendices / Supplementary material** are usually added to give additional details in data and analysis, not suitable (in extent and/or detail) for the main chapters in your report. In the main chapters, properly refer to this additional material.
- ☐ The full report, main chapters including supplementary sections, should warrant the **replication of your research** (data, analysis, etc.). Others should be able to repeat and confirm the basic findings of your study, using the information given in your report.
- ☐ **Lists of Abbreviations, Symbols, Tables and/or Figures** can be optionally added to the report, usually before the start of the Introductory part. Keep the use of acronyms to a minimum.

Title page, title of the report

- ☐ The title page containing at least:

  (1) Title, optional subtitle (2) Student initials, surname, ID (3) Name of the program: BSc Applied Physics (4) Study load of Bachelor's Final Project, 10/15 EC (5) Month, year of finalized report (6) Name of responsible supervisor (first examiner), research group, department (7) Optional: name of daily supervisors (8) Statement that the report follows the TU/e Code of Scientific Integrity.

- ☐ The **title of the report is compact and contains key words** of the research, methods or techniques. It optionally hints towards the overall result or conclusion of the thesis work.
- ☐ A **subtitle is optionally added** when more detailed key words are required to frame the research, methods or conclusions.

Summary / Abstract

- ☐ The summary/abstract at least contains:

  (1) Background of the work (2) Research objectives or hypothesis (3) Research methodology, and (4) Obtained main results and factual conclusions.

- ☐ The **abstract is sufficiently concise**, for the reader to have fast access to the impact of the work. Typically, it fits to half a page, and never exceeds a full page.

Introductory part

- ☐ To clarify the motivation and objectives of your work, the introduction usually starts with an adequate **scientific, technological and/or societal background** to the work, including a representative selection of references to relevant scholarly literature.
- ☐ After identifying the open issue or quest in the research field, the introductory part should clearly state **your motivation and actual research objectives** of the present study.
- ☐ In connection to motivation and objectives, the introductory part optionally includes a **short written outline of the remaining chapters/sections** of the thesis, to optimally guide the reader. It may also optionally include a preview of the main conclusions of your thesis work.

Main chapters / sections

- ☐ Following the Title page, Summary/Abstract and Table of Contents, (and preceding the references) the report contains a selection of logically structured main chapters/sections; typical examples:

  Introduction (see earlier), Background, Technology Assessment, Methods, Research Tools, Theory, Results, Interpretation, Discussion, Recommendations, Outlook.

Please note that these chapter/section titles are just examples, these are not mandatory!

A customized selection and ordering of these typical chapters/sections is used such that the actual results and discussion are well positioned within the entire report. Alternative titles for your chapters, that are specific for your project and your storyline, can be considered. As mentioned earlier, discuss this with your supervisor at an early stage!

☐ In view of the length-limit indication (20-30 pages or 10,000 words), **chapters on theory, methods and tools are carefully configured preferably without extensive reproduction of textbook-like elements**. Use appropriate references (ideally including hyperlinks) to other sources when writing these chapters, and keep in mind that these parts should be written in a way to optimally introduce the actual research results and discussion.

References/Bibliography and Appendices/Supplementary

☐ The **list of references/bibliography**, positioned at the end of the report, is logically structured and sufficiently clear, using a consistent format. In the main text, references to this list are systematic and precise. A reference management tool is recommended.
☐ A standard **reference/bibliography style** has been chosen that is commonly accepted, such as used in physics papers by American Physical Society (APS), Institute of Physics (IOP), or Nature/Science.
☐ **Appendices / Supplementary material** can be included to avoid a too lengthy or detailed report and/or to facilitate reproduction of the actual research.

Technical requirements: figures, tables, equations, symbols, concepts

☐ For style/conventions/typefacing of **figures, tables, equations, symbols** etc., the guidelines in *Experimental Physics* courses of the *BSc program Applied Physics* at TU/e can be consulted.
☐ For style/conventions/typefacing, also **typical (applied) physics papers can be consulted**, see e.g. guidelines at the American Physical Society (APS), Institute of Physics (IOP), or Nature/Science journals.
☐ Relevant **physical/technological concepts, parameters and symbols** are introduced at their first occurrence. When using **equations and physical arguments** that are not derived or introduced in thesis, and which cannot be considered as basic physics knowledge, they should be properly cited.
☐ All **figures and tables carry a caption** containing all the information necessary to understand what is actually shown. The full interpretation/explanation of the figure/table should be in the main text, it does not belong to the caption.
☐ All **figures and tables are referred to in the main text**. Numbering is dictated by appearance in the text. All **equations carry a number**, unless they are integrated as part of the main text, and all **equations are part of a running sentence**. Automatic numbering of figures, tables and equations is recommended.

BACHELOR'S FINAL PROJECT – BSc APPLIED PHYSICS

CHECKLIST for PRESENTATION

Assessment, audience, duration, general recommendations

- ☐ The presentation will be **attended and graded by two examiners:** the responsible supervisor, and the second examiner (both from TU/e). Daily supervisors will be usually present and consulted for the assessment. Attendance by other group members (students, staff) is usually facilitated.
- ☐ The **key assessment criteria** for your presentation can be consulted in the Assessment Protocol Bachelor's Final Project BSc Applied Physics. This includes all elements listed at item 2a. Content and structure, and item 2b. Performance.
- ☐ The **presentation should last 20 minutes**, thereafter follows a **discussion of typically 10 minutes**. Generally speaking, presenters in physics often spend 1-2 minutes per slide, which means that presentations are typically supported by **10-20 slides** (excluding a series of slides belonging to an animated sequence).
- ☐ The **scientific level of the presentation** should optimally match the audience. Ensure that the presentation is at a level such that all other BSc-AP students in your research group are able to grasp the essentials of your talk. It can be assumed that topics and theory within BSc-AP major courses is familiar. Still, those not directly involved in your project usually need more introduction and explanation than you might think.
- ☐ Unlike your report, your **presentation is not meant to show all you have done** in the project**.** In most cases, this means you have to boil down your work its essence and make it understandable even for the non-experts. Not all subjects covered in the report need to be contained in the presentation, also the order of subjects can be completely different.
- ☐ You are strongly advised to **carefully prepare and practice your presentation** well in advance, preferably with your supervisor(s) or other students working on similar subjects. This will help you optimize the timing (20 minutes), design and physics content, including your actual performance
- ☐ Before designing and detailing your slides, **discuss with your supervisor(s) the outline of your talk**, which is related to the main message and subjects to be discussed. See the following section.

Message and motivation, subjects, structure

- ☐ To make a strong outline, it is very important to **identify the main take-home message of the presentation**. Try to capture the message of your presentation in a single sentence. Identify which topics need to be explained and what results need to be shown in order to convey the main message. All you present is there to explain or support the take-home message!
- ☐ At the start of your talk, **try to immediately catch the attention** by clear opening sentences or statements. Consider showing a compact, catchy version of the project title or to immediately highlight the main take-home message. Carefully practice these first sentences, these are key in getting and keeping the attention of the audience. A catchy image on the opening slide may also help to attract attention.
- ☐ In the first part of the talk, you should carefully **introduce the motivation behind the project**. This requires giving sufficient background information about physics or technology in this particular field, within the research (sub)group.

- ☐ In the introductory part, clearly mention the **actual research question of your work**. This is typically followed after the motivation and narrows down to your actual contribution or quest. You may anticipate on the conclusions to better guide the audience through your presentation.
- ☐ Keep the attention of the audience by a **coherent and recognizable structure** of the presentation and consider implementing intermediate conclusions. As mentioned, be critical in selecting what is needed to support the message, in terms of background, theory, results, figures, etc. Be aware that the words you speak when moving from one slide to the other are very important in creating a clear storyline – prepare those links with care.
- ☐ Unlike your report, **a table of contents or outline is not required** to guide the audience, it may even weaken the narrative; a well-prepared message, storyline and supporting slides are much more essential
- ☐ For each figure, scheme or diagram you are showing, **take time to explicitly highlight and explain all details of graphs**, such as what is plotted along axes and what the different curves or data sets mean. You know what is in the graphs, but an audience needs enough time to consume this new information and recognize what is shown.
- ☐ You should finish the presentation in a natural way, which most likely puts the **main conclusions, take-home message, or outlook**, at the end of your talk. Keep the concluding part compact to regain full attention by the audience. Try to close the circle by answering the research question you posed at the start of the presentation.

Stage performance

- ☐ By preparing yourself optimally, you should be able to demonstrate **engagement, confidence, enthusiasm, and liveliness**. Since this is one of the key elements for a successful presentation, specifically ask for feedback on these aspects during practicing the presentation with others.
- ☐ It is **natural to be nervous for your presentation**. You have to learn to recognize the symptoms and to appreciate them for optimizing your performance. By systematically practicing and analyzing your presentations, you gain experience and nervosity may actually help your performances. You may consider using video recordings of your presentation in the preparation phase.
- ☐ When **speaking to the audience**, your voice should be loud enough with a clear articulation and lively intonation. Use a conversational pace but try to make variations when appropriate. Use body language or even supporting tools and try to continuously keep eye contact with your audience.
- ☐ As a **junior scientific presenter**, the sentences you are using should be compact and at a proper scientific level, and your explanations and reasoning should be correct and clear, and structured in a logical way. Only use physics terms and English that you feel comfortable with. Make sure that all your statements are supported by either data or references.
- ☐ A good way to test your presentation is to record yourself on camera and then **critically review your own performance** given all the feedback you already received. Compare it with your own experience of what you liked and disliked at other presentations or lectures. Obviously, you may consider sharing your recordings with fellow students/friends for asking additional feedback.

Technical requirements

- ☐ When designing your slides, **use current TU/e templates** online available.
- ☐ Mention your name, supervisors, research group or location (usually but not necessarily all on the title slide). Acknowledge others that contributed to your work; number your slides. Give correct reference when using pictures and other material, from literature or other sources.

- ☐ To ensure the audience is mostly concentrating on you and your narrative, **use a limited amount of compact phrases or words on your slides**. The format/layout of these text elements on your slides should be coherent and well-readable during the full presentation. In many cases, a slide is carrying a dedicated title of your slide with a limited amount of words, and the main conclusion of that slide is displayed as well – make this coherent for the full presentation.
- ☐ Put great effort in **carefully designing your figures, schemes and diagrams**, preferably eye-catching and as simple as possible, containing limited elements that are very well visible in size and color. Consider breaking up figures or diagrams into parts and introduce them sequentially. As a rule of thumb: figures/graphs from the report should be fully redesigned for using it in your talk. Often figures from literature need to be remade or simplified. Properly align different graphical elements and text to assure a structured layout.
- ☐ Using **tables with numbers** is in most cases not recommendable, as well as **mathematical derivations**. In case of showing **formulas or equations**, usually try to show these in a compact, understandable and attractive way.
- ☐ Use **animations in your slides** when it will benefit your narrative and performance, e.g. when explaining a complicated concept, or when elements in figures are added sequentially. Make sure to carefully prepare and practice animated sequences when you do add them. Avoid too many control/mouse clicks – in particular assure that information stays projected enough time.

Questions and discussion

- ☐ After **finishing the presentation**, usually an applause will be given, and the audience (including examiners) are allowed to ask questions. As a rule of thumb: do not end with a question, in particular “Are there any questions?”, but you may thank the audience for their attention, and you could add “I will be happy to answer any of your questions”. Discuss with your supervisor in advance who is initiating/regulating the questions, which is usually the chair of the meeting.
- ☐ For all **questions after the talk**, repeat the question in your own words and direct your answer to the entire audience. When needed, immediately go back to the slide in question for supporting the discussion (in PowerPoint: type slide number, press enter)
- ☐ In **answering questions**, explain your thoughts natural and open-minded, similar to scientific discussions. Show respect for all types of questions and try to judge whether your answers are well received. When you do not fully understand the question, ask for further clarification.
- ☐ Be prepared for unexpected **questions or interruptions during your presentation**. Discuss with your supervisor in advance how to handle these situations.
- ☐ Consider having **back-up slides** when you anticipate additional discussion on specific results or subjects. Make sure you are able to quickly navigate to this supporting material.