

University of Stuttgart

**Guideline
for the**

Interdisciplinary project- based learning module

**in the bachelor's degree programs at
the University of Stuttgart**

Coordinating Institute

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These guidelines have been issued to ensure the consistency of the interdisciplinary, project-based learning module for undergraduate students at the University of Stuttgart; they are **binding for students and their advisors**.

For the sake of readability, these guidelines do not list masculine and feminine forms side by side. All statements referring to individuals apply equally to all genders.



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1 Projects within the Interdisciplinary Project-Based Learning Module

The following section explains what the project is within *INTERACT*'s interdisciplinary project-based learning module.

1.1 What is an itPBL project?

To understand the importance of projects in the interdisciplinary project-based learning module, it is worth first looking at the term “project.” A project can generally be understood as a time-limited endeavor aimed at addressing a specific question or challenge and developing innovative and viable solutions for it. It is characterized by four key features: a clearly defined objective, a time limit, independent planning and organization, and the tackling of a complex task that cannot be solved through routine work processes.

Project work within the framework of the interdisciplinary project-based learning module builds on this understanding of a project and combines it with the requirements of scholarly work and writing. The goal is to address a clearly defined research question in a systematic, methodologically sound, and transparent manner. To this end, the research question is first refined, and the relevant state of the art is reviewed before suitable scholarly methods are selected, justified, and applied. The results obtained are critically analyzed, contextualized within the existing body of knowledge, and transparently documented.

In companies, public institutions, and organizations, projects are often carried out by interdisciplinary teams. The academic investigation of complex issues also benefits from interdisciplinary collaboration. Students from different disciplines contribute their respective theoretical approaches, technical terminology, and methods; reconcile differing research interests; and synthesize the various perspectives into a coherent argument. A prerequisite for this is that assumptions, work steps, and results are disclosed within the team, substantiated from a technical standpoint, and critically discussed.

ItPBL project work expands this interdisciplinary approach to include a transdisciplinary perspective. In addition to collaboration among students from different disciplines, external partners from the professional world—such as companies, public institutions, municipalities, or social organizations—are actively involved in the learning and work process. This links academic perspectives with real-world challenges and can contribute to concrete social or economic value.





1.2 What are the objectives of the projects?

The itPBL projects aim to prepare students for the demands of an increasingly interconnected world of work and life. In addition to deepening their subject-specific knowledge, the program focuses on developing the skills necessary for successful collaboration in interdisciplinary and transdisciplinary teams.

1.2.1 Bringing together different disciplines and perspectives to address real-world problems

Students from different degree programs work together in a team to collaboratively address an overarching problem posed by an external project partner. The goal is to combine different disciplinary perspectives, methods, and approaches and to jointly develop innovative solutions.

Through continuous exchange, students learn to understand and contextualize knowledge from other disciplines and to use it constructively to achieve shared goals. Through collaboration with external industry partners, the interdisciplinary perspective is expanded to include a transdisciplinary dimension. Academic insights are linked with practical, experiential knowledge, fostering a reciprocal transfer of knowledge between university and society.

1.2.2 Acquiring project management skills

Successful project management requires a combination of methodological “hard skills” (planning, control) and interpersonal “soft skills” (leadership, communication). In the itPBL module, students learn to organize projects independently, structure work processes, assume responsibilities, and document and continuously reflect on project progress. In doing so, they acquire fundamental project management competencies that are of major importance both in their further studies and in their future professional lives.

1.2.3 Development of problem-solving and innovation skills

As part of their project work, students tackle real-world and often open-ended problems for which no clear-cut model solutions exist.

They analyze problems, develop various approaches to solutions, critically evaluate them, and derive well-founded recommendations for action. In doing so, they strengthen their ability to systematically address complex challenges and develop creative and scientifically sound solutions.



1.2.4 Expanding knowledge of scientific methods and applying findings

The projects offer students the opportunity to address real-world problems using established, practice-proven methods from science and research. This includes, in particular, independent, research-based literature reviews; the conception and implementation of research designs; the analysis and evaluation of scientific findings; and the application of these findings to practical problems. At the same time, students learn to document their results in a transparent manner and to communicate them in a way that is tailored to the target audience.

1.2.5 Creating social benefit and knowledge transfer

A key feature of the itPBL module is that the issues addressed have a concrete connection to current challenges in business, society, or public institutions. The project work thus creates a space where scientific findings and practical experience are integrated. The goal is to collaboratively develop solutions that offer added value to both the participating industry partners and society, while simultaneously providing students with authentic insight into real-world problems.

1.2.6 Development of future skills

The demands placed on graduates of universities are constantly changing. In addition to in-depth subject knowledge, interdisciplinary skills are becoming increasingly important. The itPBL module offers students the opportunity to develop and apply these so-called “*future skills*” in a practical setting.

This includes, in particular, the ability to

- systematically address complex problems,
- develop creative and innovative solutions,
- collaborate successfully in interdisciplinary and transdisciplinary teams,
- deal responsibly with uncertainty and change,
- integrate different perspectives,
- communicate effectively and provide constructive feedback,
- act independently and engage in continuous learning,
- apply scientific findings to practice in a manner appropriate to the target audience.

Each of the objectives described represents an important building block within the bachelor’s program and helps prepare students both for their future academic path and for the demands of an increasingly interconnected and dynamic professional and personal world. The itPBL project combines academic learning with the examination of real-world social and economic issues, thereby creating a learning environment in which students can develop their subject-specific, methodological, and personal competencies in equal measure.



The organizational and formal framework described in this guideline forms the basis for the successful implementation of the project work. It provides a common framework for students, faculty University of Stuttgart advisors, and industry partners, and helps to ensure comparable conditions for all project groups. At the same time, it offers sufficient flexibility to accommodate the diverse requirements of the various project topics.

1.3 Success of the project

The success of a project does not depend solely on formal requirements. Rather, it hinges on the interplay of various factors that collectively contribute to the success of interdisciplinary and transdisciplinary collaboration.

1.3.1 Uniform framework conditions and qualified supervision

The faculty advisors at the University of Stuttgart play a central role in supporting the project groups. Applying the organizational and formal framework as consistently as possible helps to create comparable learning and working conditions for all students and ensures the long-term quality of the project work. At the same time, the supervisors at the University of Stuttgart see themselves as subject-matter experts who guide students and support the process. They encourage independent work, help students reflect on their approach, and guide them in addressing complex issues.

When project work is carried out in collaboration with external companies or organizations, their professional expertise further enriches the learning process. Interaction with industry partners enables students to apply scientific methods to real-world problems and to incorporate different perspectives into their solutions.

1.3.2 Student responsibility and active participation

The itPBL module thrives on student engagement, excellent organizational conditions, qualified supervision, and exciting research questions from academia, business, and society. However, its success depends largely on the active contribution from each team member to the group process, taking responsibility, valuing different professional perspectives, and being willing to develop viable solutions together with the other team members.

Tackling real-world challenges in particular requires openness to new ways of thinking, constructive communication, and a willingness to tolerate uncertainty and develop solutions collaboratively. Project work is therefore not merely an academic assessment but, above all, a space for learning and development where students combine their subject-specific competencies with interdisciplinary and transdisciplinary approaches and prepare themselves for the demands of an increasingly complex and interconnected professional world.



1.4 Characteristics of the projects

The itPBL module is a one-semester course in which students from various disciplines work together on a real-world problem from the fields of business, society, or public institutions. The course begins with an **introduction to the fundamentals of project management** and the organizational framework of the project work. Throughout the semester, students receive subject-matter and methodological guidance from faculty advisors at the University of Stuttgart and are supported in carrying out their project assignment.

In addition to the project work, students complete a **digital self-study course on academic research and writing**. This course teaches the fundamental skills required for the project and helps students apply academic methods directly to their own projects. This creates a shared methodological foundation upon which interdisciplinary collaboration can be built. The scope of the project corresponds to a workload of **180 working hours** and equals **6 credit points (ECTS)**. Some degree programs offer the option to treat it as a **3-credit-point (ECTS) course** with a workload of **90 working hours**. The projects are designed in a way so that they can be completed within one semester.

The project is classified as a **non-graded academic achievement**. Its specific integration into the curriculum (e.g., as a key competency or within a specialized module) depends on the respective requirements of the degree program. The focus is on the collaborative learning process, the development of interdisciplinary and transdisciplinary skills, and the application of scientific methods to real-world problems. This is why the project is not graded.

The project is intended for students who have already completed their introductory studies and are now in their major studies. They are usually in the 4th semester at this point. By then, students already possess fundamental subject-specific knowledge, which they can apply, expand upon, and integrate with perspectives from other disciplines as part of the project.



INTERACT – Registration for the Project

What You Need to Do – in 3 Simple Steps



REGISTRATION PERIODS



WINTER SEMESTER

August 17 – August 31



SUMMER SEMESTER

February 15 – February 28



IMPORTANT INFORMATION

- Assignment to project groups is handled by the itPBL project team.
- The goal is to form balanced, interdisciplinary teams.
- There is no guarantee of being assigned to a specific project.

REGISTRATION PROCESS

1

REGISTRATION FOR A PROJECT

Select a project you're interested in from the project portal.

Fill out the online form with your personal information and submit your registration.

You will receive an automatic registration confirmation via email.

Note: The confirmation merely indicates that your registration has been received—it does not constitute a binding commitment.

2

ASSIGNMENT OF PROJECT GROUPS

When the registration period ends, the itPBL project team will set up the project groups.

The following will be taken into account:

- ✓ Your preferences
- ✓ Interdisciplinary composition
- ✓ Group size
- ✓ Project requirements

3

BINDING REGISTRATION CONFIRMATION

Once the teams have been set up, you will receive a **binding confirmation of registration** via email:

This will include:

- ✓ Project title
- ✓ Project number
- ✓ Group composition
- ✓ Contact information of the advisors at the University of Stuttgart

REGISTRATION AT A GLANCE



Registration period
08/17 – 08/31 (WiSe)
02/15 – 02/28 (SoSe)



Registration
for a project
(step 1)



Assignment of
project groups
(step 2)



Binding confirmation
of registration
(step 3)



Contact by the
advisor and
project start



Your advisors at the University of Stuttgart will receive information about your group at the same time and will contact you shortly to organize the first meeting and kick off of the project.

WITHDRAWAL – THINGS TO BE CONSIDERED



DURING THE REGISTRATION PERIOD

You can cancel your registration in the portal and register for another project.



AFTER CONFIRMATION OF REGISTRATION

Changing projects is generally no longer possible. In justified exceptional cases, the itPBL project team will try to find a solution.

QUESTIONS OR PROBLEMS?



For technical or organizational questions regarding registration or withdrawal, please contact the itPBL project team.

Email: interact@uni-stuttgart.de



OUR GOAL: Balanced, interdisciplinary teams and successful collaboration on your itPBL project!

Figure 1: Project registration



1.5 Registration/withdrawal from the project

Registration for an itPBL project is done through the central [project portal](#). The project topics offered in each semester are published there along with a brief description. The registration period for the winter semester runs **from August 17 to August 31**, and for the summer semester **from February 15 to February 28**. All relevant information regarding registration and the subsequent process will be provided in a timely manner via the [project portal](#). During registration, students select a project they are interested in. The final assignment to a project group is done by the itPBL team. The goal is to form teams that are as balanced and interdisciplinary as possible, while taking students' preferences into account. There is no guarantee of assignment to a specific project. This approach to group composition is an essential component of the pedagogical concept behind *INTERACT's* interdisciplinary project-based learning module. Collaborating with students from different disciplines offers new interdisciplinary and cross-cultural perspectives for addressing complex problems and enables students to learn from one another and become familiar with different ways of thinking and working. At the same time, it fosters skills such as communication, teamwork, shifting perspectives, and interdisciplinary collaboration, which are of great importance for future professional practice.

Since the project groups are composed of students from different degree programs, organizational challenges may arise when scheduling meetings due to varying class schedules. Independent planning of joint work phases is therefore a deliberate component of the project. It offers students the opportunity to further develop their skills in project management, self-organization, and team coordination, and to jointly develop viable solutions for collaboration. Should any technical or organizational questions arise during registration, the itPBL team is available to assist students.

1.5.1 Steps for registration on the project portal

Registration for itPBL projects is conducted entirely through the central [project portal](#) and consists of three consecutive steps.

Step 1: Register for a project

During the registration period, students select **a project** in the [project portal](#) that they are interested in. Registration is completed via an online form that collects personal information. After the registration has been successfully submitted, students automatically receive a registration confirmation via email. This confirmation solely acknowledges receipt of the registration and does not yet constitute a binding assignment to a project.





Step 2: Assignment to a project group

After the registration period ends, the itPBL team will review the project groups, reassign students, if necessary, and approve group assignments.

In particular, the following aspects are considered:

- the students' preferences,
- an interdisciplinary composition of the teams,
- the size of the project groups,
- the requirements of the respective project.

Step 3: Binding registration confirmation

Once the topics and group assignments have been approved, students will receive a binding registration confirmation via email. This includes, among other things:

- the project title,
- the project number,
- the composition of the project team,
- and the contact details of the advisor at the University of Stuttgart.

At the same time, the advisors at the University of Stuttgart will also receive information about their project group. They will get in touch with the students to organize the first joint meeting and kick off the project.

1.5.2 Withdrawal from the project

During the registration period, students may independently withdraw their registration on the [project portal](#) and then register for a different project. Once the registration period has ended and the binding confirmation of registration has been sent, changing projects is in general no longer possible. In justified exceptional cases, the itPBL team will try to find a suitable solution. If a student withdraws their application during the registration period, their registration on the [project portal](#) will be canceled, allowing them to register for a different project. If a student has any technical questions or encounters problems related to registration or withdrawal, the itPBL team is happy to assist them.



1.6 Available topics

The itPBL module offers a wide variety of projects covering diverse social, economic, and scientific topics **each semester**. The projects are developed in collaboration with departments at the University of Stuttgart as well as external project partners and offer students the opportunity to work on real-world, practical problems.

Projects are published well in advance of the registration period via the central [project portal](#). This gives students ample time to familiarize themselves with the available projects and determine their preferences for registration. Information is provided for each project on the [project portal](#) to enable students to make an informed choice. This includes:

- the project title,
- a brief description of the problem and objectives,
- the participating organization or external project partner (if applicable),
- the advisor, i.e. supervising faculty member from the University of Stuttgart,
- the intended fields of study or academic perspectives,
- the number of available project positions,
- as well as any special requirements or notes regarding project work, if applicable.

Projects can be filtered and searched by various criteria on the [project portal](#), providing students with a structured overview of the current project offerings. If you have questions about the content of a project, you can contact the advisor at the University of Stuttgart before registering.

1.7 Group size(s)

ItPBL projects are usually managed by interdisciplinary teams of about ten students. This group size has proven to be suitable for bringing together different disciplinary perspectives while enabling active participation by all group members. The composition of the project teams aims to include a wide variety of degree programs and fields of study. Depending on the project content and organizational conditions, the actual group size may vary slightly from the target size in individual cases. Care is taken to ensure both the successful completion of the project and adequate supervision of the students. If a sufficiently large group cannot be formed for a project or if a suitable interdisciplinary composition cannot be achieved, the itPBL team reserves the right to cancel a project and to reassign the students to other projects.



1.8 Process and implementation of the projects

Version:
WiSe 26/27

The Process of a Project

Collaborative. Interdisciplinary. Practical.



Figure 2: Project process





1.8.1 Process

The itPBL project work follows a structured project process that provides students with a clear organizational framework while leaving sufficient leeway for individual creativity in the project work.

1.8.1.1 Kick-off and project launch

The project starts with a mandatory kick-off event that is independent of the specific projects. During this event, students receive an introduction to the project workflow, the organizational framework, and the fundamentals of project management. In addition, the goals of the project, the roles of the various participants, and the expectations for collaboration are explained.

In addition, all students must complete the mandatory digital self-study course **“Academic Work and Writing.”** The course teaches fundamental skills in academic work and provides the methodological foundation for completing the project. The content is directly applicable to the students’ own project and reinforced through mandatory exercises.

Once project assignments have been finalized, the University of Stuttgart advisors will contact their project groups and organize the first project meeting together with the students. This meeting should be done within the first two weeks of the semester, if possible.

1.8.1.2 First project meeting

The first joint meeting serves to get to know the project group and to kick off the project work. The goal is to develop a shared understanding of the project assignment and to establish the organizational foundations for collaboration.

In particular, the following points should be addressed:

- Presentation of the project task and objectives
- Getting to know the group members and their academic backgrounds
- Clarification of roles, responsibilities, and communication channels
- Initial structuring of the project task and planning of next steps
- Agreeing on regular meetings and milestones



If an external project partner is involved, it is recommended to include them at the very beginning of the project to clarify any open questions regarding the project scope and to develop a shared understanding of the project.

1.8.1.3 Work phase

During the implementation phase, students work independently on the project task. Regular meetings within the project group serve to coordinate progress, consolidate results, and make joint decisions.

In addition, regular coordination meetings are held with the University of Stuttgart advisors. These serve to

- reflect on the project's progress,
- clarify technical and methodological questions,
- identify challenges early on,
- support students as they continue working on the project.

Depending on the project, there may also be regular communication with the external project partner to address questions, discuss interim results, or gather feedback.

1.8.1.4 Final phase

In the final phase of the project, students work together to develop a presentation. The goal of this presentation is to show the results of the project and to ensure that each student can highlight their contribution. The presentation can also serve as a preliminary basis for the final academic project report. This marks the conclusion of the project and the interdisciplinary project-based learning module. More detailed information on the scientific project report is provided in Chapter 1.8.3.



1.8.2 Implementation

1.8.2.1 Collaboration within the project group

The project thrives on open, respectful, and constructive collaboration. All group members share responsibility for the project's success and support one another in achieving the project goals.

Regular communication within the project group helps to

- share knowledge across different disciplines,
- incorporate different perspectives into solution development,
- make work progress transparent,
- jointly resolve challenges at an early stage.

1.8.2.2 Role of the advisor from the University of Stuttgart

The University of Stuttgart advisors guide the project groups throughout the entire project as technical and methodological points of contact. They assist students in structuring the project, encourage independent work, and provide technical guidance as needed.

The goal of this supervision is to support students in their learning process without taking over the independent development of potential solutions. Responsibility for the planning, organization, and implementation of the project work lies primarily with the project group itself.

1.9 Scope of work

The following section explains all key requirements that must be met to pass the interdisciplinary project-based learning module.

1.9.1 Components of the project

The course assessment consists of several interrelated components. These accompany the entire course of the project and support students in planning their project work in a structured manner, conducting it in a scientifically sound way, and presenting the results in a manner appropriate for the intended audience.

The individual components have different objectives and together form the foundation for a successful project completion. These components are explained individually below.



Figure 3: Timeline and submission deadlines at a glance



1.9.1.1 Exposé

At the start of the project, each project group creates a joint summary.

This serves to

- describe the initial situation of the project,
- specify the objectives,
- outline the planned approach,
- define the initial work packages,
- develop a realistic project plan.

The exposé will be submitted to the advisors at the University of Stuttgart and will serve as a basis for initial academic feedback. This feedback is intended to help the project groups reflect on their approach at an early stage and adjust it if necessary.

1.9.1.2 Project planning (Gantt chart)

In addition to the exposé, each project group will detail the structure and timeline of the project in the form of a Gantt chart.

The chart details

- the individual work packages,
- responsibilities within the group,
- timelines,
- and key project steps.

The Gantt chart helps the groups plan their project work and serves as a basis for regular coordination meetings with the University of Stuttgart advisors.

1.9.1.3 Scientific project report

At the end of the project, the project group will prepare a joint scientific project report. This report documents the entire course of the project as well as the jointly developed results.

The introduction and conclusion of the report are written by the whole group. The main body consists of a compilation of individual papers from group members. Each group member's individual contribution should have a length of **ten pages** and be integrated into the project report as a separate chapter. Care must be taken to ensure that the name of the respective author is listed in the chapter. When drafting the main body, it is also important that the individual chapters are not simply strung together but are interconnected and flow seamlessly into one another.



This creates a collaborative scholarly work that brings together the various work packages and reflects the interdisciplinary nature of the project.

The formal requirements for the written report are described in the second part of these guidelines. The joint scientific project report has to be sent no later than

- **September 30** (summer semester)
- **March 31** (winter semester)

to the advisor at the University of Stuttgart.

1.9.1.4 Final presentation

At the end of the project, each project group presents its results in a joint final event. The final presentations generally take place **during the last week of classes before the start of the break.**

The goal of the presentation is to

- present the initial research question,
- outline the course of the project,
- explain the proposed solutions,
- and present the key findings in a clear and audience-appropriate manner

The presentation will be prepared jointly by the entire project group. Each project member is expected to actively contribute to the presentation in accordance with their area of responsibility. **Five minutes** are allocated **per person**.

If possible, the external project partners will be invited to the final presentation in addition to the University of Stuttgart advisors.

1.9.1.5 Self-study course: academic research

During the project, all students will complete the mandatory digital self-study course **“Academic Work and Writing.”** The course teaches fundamental skills in academic work and supports students throughout the entire project.

The content of the self-study course provides the methodological foundation for preparing the written project documentation and supports students in the scholarly analysis of their project assignment. To successfully complete the course, students must take the corresponding final test before the end of the deadline and pass it. (The test may be retaken an unlimited number of times.)



1.9.2 Assessment and feedback

The itPBL project is conducted as an **ungraded academic assignment**. The goal is to provide students with a safe learning environment, where they can experiment with and further develop their skills in scientific methods, project management, and inter- and transdisciplinary collaboration.

Successful completion of the project requires that the specified components (individual and group work) are completed in full and in accordance with the requirements.

These include:

- timely preparation of the project proposal and Gantt chart as a project group,
- active participation within the project group throughout the entire course of the project,
- active participation in the joint final presentation,
- timely preparation and submission of the joint academic project report, including an individual academic contribution of ten pages,
- as well as successful completion of the mandatory self-study course “**Scientific Work and Writing,**” including the corresponding final exam.

The University of Stuttgart advisors assess whether the requirements of the project have been met, based on a standardized evaluation form. Specific attention is given to the achievement of learning objectives, the quality of individual contributions, participation in the project, and the joint project performance.

Upon completion of the project, students receive individual feedback on their work. This feedback is intended to support personal skill development and provide guidance for future academic work and additional projects.

Upon successful completion of the project, students are awarded **6 or 3 credit points (ECTS)**. Credits are recorded centrally by the itPBL team.

Personal feedback is an essential component of the pedagogical concept underlying itPBL and *INTERACT*. It offers students the opportunity to reflect on their subject-specific, methodological, and interdisciplinary competencies, to further build on their strengths, and to work specifically on their personal development. Thus, the project is not merely an academic requirement but, above all, a learning and development process that prepares students for further academic work as well as for the demands of an increasingly interdisciplinary and transdisciplinary professional world.



2 Structure of the Paper and Guidelines for Academic Writing

2.1 Structure of the project paper

The following structure is recommended for the project paper. It is based on the usual structure of academic papers (apart from including an assignment sheet). The student group should follow this order when compiling the paper.

1. Front page
(a sample template can be found in the appendix to this guideline)
 2. Copy of the assignment sheets
(A sample can be found in the appendix to this guideline)
-
3. Table of Contents (outline)
 4. List of figures, if applicable
 5. List of tables, if applicable
 6. List of abbreviations, if applicable
 7. List of symbols, if applicable
- ↑

↓

Continuous page numbering with Roman numerals
-
8. Text of the thesis
(introduction, main body [consecutive chapters], final remarks and conclusion)
 9. Appendices
(tables and figures that are not of specific relevance for the project should be included in this section)
 10. Bibliography (according to DIN ISO 690)
- ↑

↓

Continuous page numbering using Arabic numerals



2.2 Formatting

The following table offers recommendations on the formal structure and layout of the text.

Page margins	Top: 2 cm Bottom: 2.5 cm	Right: 2 cm Left: 4 cm
Fonts	Arial: 11pt Times New Roman: 12pt	
Line spacing	1.5	
Alignment	▪ The alignment should be justified. ▪ Automatic hyphenation is recommended!	
Page numbering	▪ Page numbering should be right-aligned or centered. ▪ Numbering should be consistent in the header or footer. ▪ All pages of the table of content should use Roman numerals. (usually in lowercase: i, ii, iii, iv, ...). ▪ Starting with the first page of the main text, the entire remainder of the work should use Arabic numerals, beginning with 1.	
Headings	▪ Headings of main sections are separated from the following text by at least 2 blank lines. ▪ Subheadings for subsections are separated from the following text by one blank line.	
New paragraphs	▪ Main paragraphs should begin on a new page. ▪ Other paragraphs should use an indent of 5 characters or a blank line as separation from the next paragraph.	
Quotations	▪ Short quotations, i.e. no longer than 3 lines, should be included in the running text with quotation marks. ▪ Long quotations, i.e. more than 3 lines, must be written with single-line spacing, indented by 5 characters, and separated from the rest of the text by 1.5 lines of spacing. The font of the quotation should be italicized and/or smaller than that of the body text.	



2.3 Components of the academic paper

2.3.1 Front page

As with any academic paper, the project paper should include a front page. When submitting the paper, the group must ensure that all papers on the overarching topic are combined *into a single PDF file*. The top sheet in the file should be the front page for the whole group (see template in the appendix). Due to the University of Stuttgart's new logo policy, the institute and university logos may only be used with the notation "Submitted to the University of Stuttgart" (see: [Logo Policy](#)). External logos are not permitted on the paper.

2.3.2 Assignment sheet/ Gantt chart

Before the start of the project, the students set up individual assignment sheets and a joint Gantt chart, supported by their advisor. These documents outline the objectives, the timeframe, and the content to be covered in the project. They serve as the binding basis for the implementation and evaluation of the project. A sample of the assignment sheet can be found in the appendix to this guideline. A template for the Gantt chart is available in the ILIAS folder for the project.

2.3.3 Table of contents

The table of contents fully reflects the structural organization of the academic project report and provides readers with a quick overview of the topics covered and their links. It includes all chapter and section headings with their full text, as well as the corresponding page numbers. In addition, the lists (e.g., table of contents, list of abbreviations, list of figures, list of tables, list of symbols, and bibliography) as well as the appendix are included with their corresponding page numbers.

A complete and logically structured outline documents the systematic treatment of the topic and contributes significantly to the clarity of the work. The formal structure should reflect the content structure of the work and clearly distinguish between superordinate and subordinate topics. Topics of equivalent substance should be placed at the same level in the outline and should exhibit a comparable level of abstraction. Chapter and section headings should describe the respective content concisely and unambiguously. General or vague terms such as "Miscellaneous," "Various," or "Additional aspects" should be avoided.

When structuring the document formally, each sublevel should contain at least two subheadings. For example, a section 2.1 may only exist if it is followed by at least one additional section (e.g., 2.2). Similarly, the presence of a Chapter 1 requires a Chapter 2. Hierarchical levels with only one subheading are not permitted.



The pages of the introductory lists (e.g., table of contents, list of abbreviations, list of figures, list of tables, and list of symbols) are numbered with consecutive lowercase Roman numerals. The main body of the thesis, including the bibliography and appendix, is numbered with consecutive Arabic page numbers. If the headings are formatted using the word processor's style sheets, the table of contents can be generated automatically and updated at any time in the event of changes to the structure or page numbers. The use of an automatically generated table of contents is therefore recommended.

2.3.4 List of figures and tables

All figures and tables included in the project thesis must be listed in a separate list of figures and tables that specifies their sequential number, their title, and the corresponding page number. This list provides readers with a quick overview of the graphical and tabular representations used.

Figures (e.g., images, diagrams, graphs, or technical drawings) and tables must be numbered consecutively throughout the entire thesis using Arabic numerals. This applies equally to figures in the main body of the thesis and those in the appendix. Figures are listed in the list of figures, and tables in the list of tables. Each figure and each table must be explained in the running text and referenced at the appropriate point. Figures and tables must not be included in the thesis without a reference in the content. Captions for figures are included below the figure, captions for tables above the table.

If figures or tables are taken from other sources or created based on them, a citation in the Harvard citation style must be provided immediately next to the respective figure or table. When creating technical drawings, the relevant DIN standards and, where applicable, additional department-specific guidelines must be followed.

2.3.5 List of Abbreviations and Symbols

All abbreviations used in the academic project report must be listed and defined in alphabetical order in a separate list of abbreviations, with the abbreviations on the left and the corresponding explanations on the right. In principle, abbreviations should be used as sparingly as possible. With a few exceptions, such as "usw.", "etc.", "e.g.", and those for currencies (€, \$), their use should be limited to abbreviations customary in the relevant technical jargon, as well as to titles/names of (specialized) journals (e&i, faz, etc.), institutions (EU, GATT, etc.) or companies (BASF, SAP, etc.). If the project paper contains formulas with (mathematical) symbols, an alphabetically sorted list of symbols must also be provided.



2.3.6 Text of the paper

The following section provides information on the writing style and general structure of the academic project report.

2.3.6.1 Language and style

The project paper must be written independently by each student, ensuring that the content is coherent and makes the topic as accessible as possible to the reader. This includes paying attention to grammatically correct sentence structures, the definition of terms used, and the consistent and purposeful use of specific technical vocabulary. Furthermore, please note that the paper must be written in the present tense.

2.3.6.2 Structure

The body text of an academic project paper is generally divided into three main sections: introduction, main body, and conclusion. This structure ensures that the project paper is presented in a clear and logical manner, allowing readers to systematically follow the research process and the results achieved.

The introduction presents the topic and outlines the overall context of the project. It explains the motivation behind the project, the thematic context of the task, and its relevance. In addition, the objectives of the project and, if applicable, the hypotheses to be tested are formulated. Finally, the structure of the project and the methodology are described. In the context of a project paper, it is also recommended to present a project structure plan or timeline, for example the group's Gantt chart. The introduction is a joint effort of the whole group of students.

The main body of the paper consists of the scholarly analysis of the topic in accordance with the outline presented in the table of contents. It documents the work packages of the individual students — and thus their individual contributions to the project — with references to relevant scientific sources. Individual contributions include a presentation and scientifically sound discussion of the methods used, the work done, and the results achieved. To the extent required by the assignment, the current state of research or technology must also be included. In addition, the main body should contain a critical reflection on the student's approach and the decisions made while working on the work package.

The conclusion, which should again be written collaboratively, summarizes the key findings of the work and evaluates them considering the objectives formulated at the outset. Furthermore, the students reflect on the interdisciplinary collaboration within the project and discuss the contribution of the individual work packages to the overall success of the project. Finally, limitations of the work may be highlighted, and an outlook on further research questions or future development opportunities may be provided.



Structure of the Academic Project Report

Structured Jointly – Completed Individually – Integrated Across Disciplines

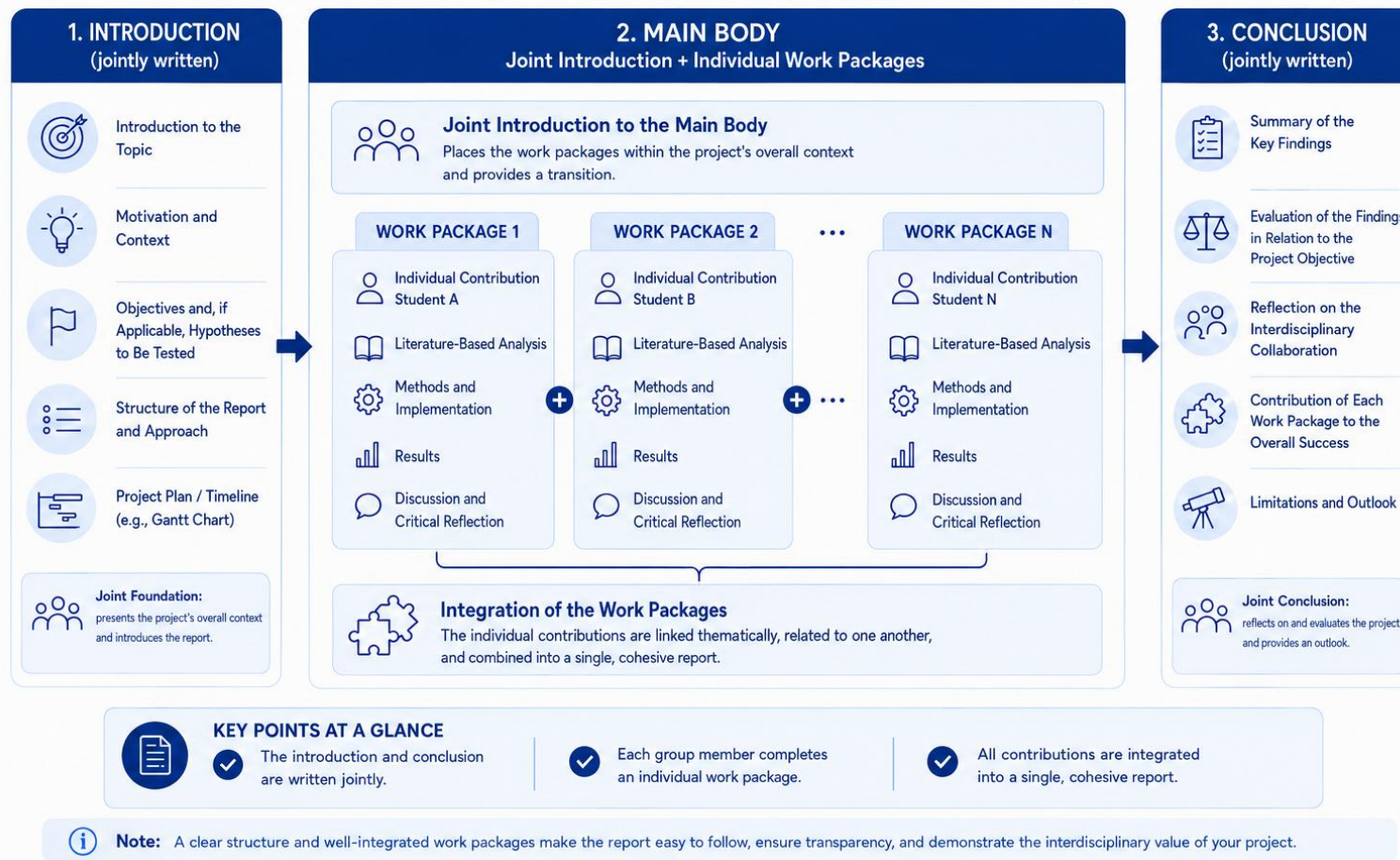


Figure 4: Structure of the Academic Project Report



2.3.7 Appendix

The appendix of the scientific paper provides the project team with the opportunity to document the results they have obtained. In general, the appendix includes all material referenced in the paper. This includes, for example, charts, statistics, measurement logs, (extensive) mathematical proofs, or even transcripts of conversations, as well as printouts from the Internet.

Sources that are not publicly accessible or have not been published must also be included in the appendix, unless legal reasons prevent this. In such cases, these sources should generally be omitted, and they should not be incorporated into the main text either.

Conversely, any content that is essential for understanding the text should generally be included in the main text rather than in the appendix.

2.3.8 Bibliography

The bibliography contains a complete list of all sources cited in the project paper, sorted alphabetically by author's last name. It should be noted here that citations from Wikipedia or other encyclopedias should be avoided.

The specific requirements for citing sources in the bibliography are detailed in DIN ISO 690:2010, "Information and Documentation — Guidelines for Title Formatting and Citation of Information Resources." The most important rules outlined therein are listed below, accompanied by examples for all major types of sources.

Monographs / specialized books

Last name, initial(s).	(Year):	Title. Edition (if not 1st).	Place(s) of publication:	Publisher.
------------------------	---------	---------------------------------	--------------------------	------------

Spath, D.; Linder, C. & Seidenstricker, S. (2011): *Technology Management*. Stuttgart: Fraunhofer Verlag.

Anthologies: edited works with multiple authors

Last name, initial(s).	(Year):	Title of the contribution.	In: Last name, initial(s). (Ed.):	Title of the anthology.	Edition (if not 1st).	Place of publication:	Publisher,	Page number(s).
------------------------	---------	----------------------------	-----------------------------------	-------------------------	-----------------------	-----------------------	------------	-----------------

Müller, T. & Schneider, A. (2022): Digitalization in Industrial Manufacturing. In: Weber, M. & Hoffmann, S. (Eds.): *Innovations in Mechanical Engineering*. 2nd edition. Berlin: Springer Vieweg, pp. 115–138.



Dissertations (university edition only)

Last name, initial(s).	(Year):	Title of the dissertation.	Dissertation note.	University,	City.
------------------------	---------	----------------------------	--------------------	-------------	-------

Langlotz, M. (2011): *A Concept for Supporting Decision-Making Processes in Product Development*. Dissertation. Technical University of Kaiserslautern.

Dissertations (published)

Last name, initial(s).	(Year):	Title of the dissertation.	Place of Publication:	Publisher,	Year.	Dissertation note.	University,	City.
------------------------	---------	----------------------------	-----------------------	------------	-------	--------------------	-------------	-------

Schnabel, U. (2013): *Management of Intellectual Capital in Knowledge-Intensive Service Providers*. Wiesbaden: Springer Gabler. Dissertation, University of Stuttgart.

Conference proceedings (unpublished)

Title of the conference.	City and date.	Location: Publisher / Organizer,	Year.
--------------------------	----------------	----------------------------------	-------

Organizing Manufacturing Companies for Competitiveness. Proceedings of the conference. Stuttgart on July 9, 2004. Stuttgart: Fraunhofer Institute for Industrial Engineering, 2004.

Conference proceedings (volume as a published work)

Last name, initial(s).	(Year):	Title of the conference. Date and location of the conference.	City:	Publisher.
------------------------	---------	--	-------	------------

Spath, D. (Ed.) (2004): *Business Development through Corporate Venturing: Innovative Approaches and Methods for Business Development*. Forum Innovationsmanagement 2004, July 2004, Stuttgart. Stuttgart: Fraunhofer IRB Verlag.

Article in a Monograph

Last name, initial(s).	(Year):	Article title.	In: Author (ed.): Title of the monograph. (if available).	City:	Publisher,	Page number(s).
------------------------	---------	----------------	---	-------	------------	-----------------

Ardilio, A. (2012): *Fraunhofer Technology Radar: Identifying Trends — Implementing Technologies*. In: Bullinger, H.-J. (ed.): *Focus on the Technology Market*. Munich: Carl Hanser Verlag, pp. 61–74.



Article in a journal

Last name, initial(s).	(Year):	Article title: Subtitle.	Journal title.	Issue No.,	Page number(s).
------------------------	---------	-----------------------------	----------------	------------	-----------------

Spath, D. & Schnabel, U. (2005): The Intellectual Capital Management Toolset: Success Factors and Metrics for Managing Intellectual Capital. *Personalführung*, 38(4), pp. 30–40.

Article in conference proceedings

Last name, initial(s).	(Year):	Paper title	In: Title of the conference proceedings:	Date and location of the conference / Editors (if available),	City:	Publisher,	Page number(s).
------------------------	---------	-------------	--	---	-------	------------	-----------------

Bauer, W. & Rief, S. (2005): Applied Research — A Catalyst for Office Innovations. In: *Human Resource Management and Work Design. Report on the 51st Congress of the Society for Ergonomics, Heidelberg, March 22–24, 2005*. Dortmund: GfA-Press, pp. 587–590.

Electronic source / Internet

Author or Institution:	(Year):	Title of the website.	Available at:	URL	(Accessed: dd.mm.yyyy).
------------------------	---------	-----------------------	---------------	-----	-------------------------

Institute for Industrial Engineering and Technology Management (IAT) (n.d.): *Institute for Industrial Engineering and Technology Management (IAT)*. Available at: <https://www.iat.uni-stuttgart.de/> (Accessed: 09/08/2014).

Patents (applicant and inventor are the same)

Name of the patent holder/applicant:	Title of the Patent Resource.	Inventor's name (not applicable).	Filing date.	Country name/code	Official designation of the patent family (main resource)
--------------------------------------	-------------------------------	-----------------------------------	--------------	-------------------	---

Honda Motor Ltd.: *Seat structure for a motorcycle*. May 10, 2007. Application: September 19, 2004. DE, Patent Publication DE602004003996T2.

Patents (applicant and inventor are different)

Name of the patent holder/applicant:	Title of the patent resource.	Name of the inventor.	Filing date.	Country name/code,	Official designation of the patent family (main resource).
--------------------------------------	-------------------------------	-----------------------	--------------	--------------------	--

Honda Motor Ltd.: *Seat structure for a motorcycle*. Inventors: Yutaka Murata; Masao Ogawa. May 10, 2007. Application: September 19, 2004. DE, Patent Publication DE602004003996T2.





2.4 Citation Rules

2.4.1 Types of citations

2.4.1.1 Direct quotations

A direct quotation occurs when parts of a sentence or entire sentences are reproduced verbatim from a source in one's own academic work. Direct quotations should only be used when both the content and the specific wording are of particular importance to the argument. This is the case, for example, with definitions, legal provisions, or particularly concise statements.

When quoting verbatim, care must be taken to ensure that the quoted text is not taken out of its original context and that its meaning is not altered. Direct quotations are indicated in the body of the text by double quotation marks.

Additions made by the author within a quotation must be placed in square brackets and identified as such (e.g., “[Author's addition]” or “[Author's note]”). If parts of a quotation are omitted, this must be indicated by three dots in square brackets ([...]). Omissions must serve solely to shorten the text and must not alter the meaning of the original statement. Emphasis added by the author within a quotation must also be clearly indicated.

Example:

“A fundamental observation in innovation research is that different technologies often develop according to similar temporal patterns” (Knaf & Heubach, 2008, p. 147).

Direct quotations in foreign languages should be quoted verbatim in their original language. A translation of the quotation in the main language of the academic work should be added in a footnote. The source of the translation should be added in brackets (e.g., “own translation” or “translated with DeepL”).

2.4.1.2 Paraphrased citations

Paraphrases are the norm in academic writing. In this process, the ideas or statements of other authors are restated in one's own words without altering their meaning. Simply rearranging individual words or parts of a sentence does not meet the requirements for an academic paraphrase.

Paraphrases must also be immediately accompanied by a citation. This makes it clear which statements are based on external sources, and which originate from the author themselves.

Example:

When designing cost accounting systems in the research and development sector, it is irrelevant whether the projects are internal or external to the company. Planning and monitoring of the project process are generally carried out according to comparable principles (Schäfer, 1984, p. 68).



2.4.1.3 Secondary Citations

Secondary citations occur when a statement is quoted that was not taken from the original source but from another scholarly publication. Generally, secondary citations should be avoided, since it cannot be guaranteed that the original statement has been reproduced completely and without alteration.

It is therefore recommended to always consult the original source (primary literature) whenever possible. Only if it can be demonstrated that the original source is inaccessible or accessible only with disproportionate effort may a secondary citation be used as an exception. Secondary citations must be clearly identified as such in the body of the text.

Example:

(Meyer, 1998, p. 45, cited in Müller, 2023, p. 112) → Only the source actually used is listed in the bibliography.

2.4.2 Citation requirement

All ideas, statements, data, illustrations, tables, formulas, and other content from external sources used in the academic project report must be identified with a complete citation. This applies regardless of whether the source is quoted verbatim or paraphrased. Citations ensure academic traceability and enable readers to verify the information used in its original form. At the same time, they clearly distinguish others' ideas from one's own academic contributions and help prevent plagiarism. In general, sources that are traceable and permanently identifiable are considered citable. These include, in particular, scholarly books, journal articles, conference papers, dissertations, standards, guidelines, official publications, and quality-assured online sources. When using documents that are not publicly accessible (e.g., corporate documents), prior consent must be obtained from the respective rights holders.

2.4.2.1 Citation techniques

This guide uses the **Harvard citation system (author–year system)** (see p. 18 ff.). Citations are included directly in the body of the text and consist of the author's last name, the year of publication, and the corresponding page number for direct quotations as well as for paraphrased quotations, as recommended.

Table 1: Citation technique examples

Direct Quote	"Quote" (Müller, 2023, p. 15)
Paraphrased quote	(Müller, 2023, p. 15)
Works with 2 authors	(Müller & Meier, 2023)
Works with three or more authors (Note: All authors must be listed in full in the bibliography.)	(Müller et al., 2023)





2.4.2.2 Guidelines for creating figures and tables

Figures and tables serve to illustrate complex concepts and should complement the text's content. They must not serve purely decorative purposes but must provide recognizable added value in terms of information compared to a purely textual description. Each figure and table must be explained in the running text and referenced at an appropriate point.

When creating figures and tables, it is important to ensure high presentation quality and good readability. Labels, symbols, and axis labels must remain clearly legible even after printing or conversion to PDF. It is recommended to use consistent font types and sizes, line styles, and design elements throughout the entire thesis. The number of different fonts and formatting styles within a single figure should be kept to a minimum.

Complex topics should, whenever possible, be presented in separate figures or tables rather than combining different pieces of information into a single representation. Extensive explanations generally belong in the running text and not in the figure or table. If colors are used, they should be applied sparingly and consistently. The clarity of the representation must be maintained even when displayed in black and white. For diagrams and technical drawings, lossless graphic formats (e.g., vector graphics) should be used whenever possible.

Figures and tables that have been reproduced or created based on external sources must be accompanied by a citation in the Harvard citation style immediately next to the respective figure or table. For technical drawings, the relevant DIN standards and, where applicable, ISO standards must be included. Within an academic paper, all figures and tables should follow a consistent design concept. This improves readability, facilitates navigation, and contributes to the paper's professional appearance.

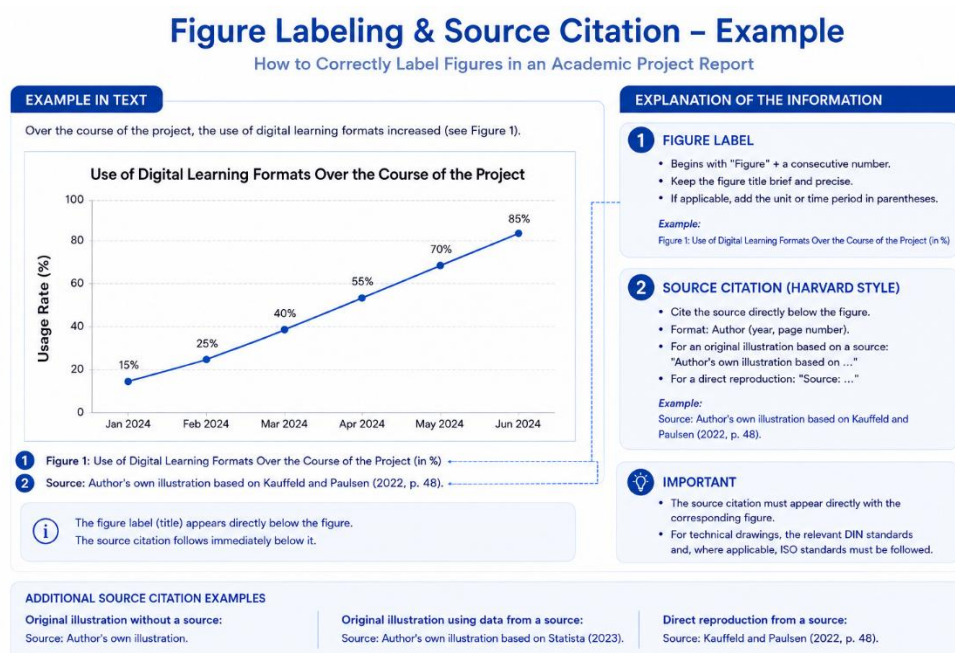


Figure 5: Example of figure labeling



3 Concluding Remarks

The recommendations described in this guideline are based on generally accepted principles of academic work as well as relevant standards and guidelines. They are intended to provide students with guidance on how to prepare academic papers and to contribute to a consistent format for project papers.

In academic literature, there are various sets of rules and citation styles that may differ depending on the field of study, institution, or academic discipline. Regardless of formal requirements, academic papers are characterized by a clear structure, a logical line of reasoning, careful handling of sources, and precise and objective language. Consistent adherence to these principles contributes significantly to the quality and clarity of academic papers.

This guide is mandatory for all participants in the academic project report within the framework of the interdisciplinary project-based learning module.

This ensures consistent evaluation, greater comparability, and a professional external presentation of the academic project report. It also provides both students and University of Stuttgart advisors with a standardized template they can refer to.



4 Appendix

- Project work assignment sheet (p. 32)
Template with instructions for completion
- Front page template (design suggestion)
Cover page for group projects (p. 33)
- Assessment form for projects (Sample, pp. 34-35)
This form is used to assess whether the student successfully completed the project.



Universität Stuttgart

Assignment Sheet for the Project for Bachelor's Students

Name _____

Student ID _____

Degree Program _____

Topic _____

Objective of the work package: What specifically needs to be done and achieved?

Project Number _____ Supervising Institute _____

Name of Advisor _____ Start Date of the Project _____

Submission Date _____ Submitted on _____

Advisor's Signature _____





Title of the project

Academic project report
as part of the
interdisciplinary project-based learning module
at the University of Stuttgart

Advisor

.....

Group members

Last Name, First Name

Degree program

Semester

Student ID

Last Name, First Name

Degree program

Semester

Student ID

.....

Submission date:





Advisors use this form to assess whether a student has successfully participated in the project.

Both sides of this form must be given to the student during the feedback session.



University of Stuttgart

Project Assessment Form (1/2)

Assessment of Learning Objectives & Performance

Evaluation Criteria		Level 1	Level 2	Level 3	Level 4	Points								
Learning Objectives	Interdisciplinary teamwork	Insufficient willingness to cooperate within the group	Adequate willingness to cooperate within the group	Satisfactory willingness to cooperate within the group	Exemplary willingness to cooperate within the group									
	Points	1	2	3	4									
	Application of project management (PM) essentials	Hardly structured, not very goal-oriented work style	Sufficiently structured, goal-oriented work style	Satisfactorily structured, goal-oriented work style	Highly structured, goal-oriented work style									
	Points	0–2	3–4	5–6	7–8									
Achievements	Solution-oriented application of knowledge	Insufficient transfer skills	Sufficient transfer skills	Satisfactory transfer skills	Exemplary transfer skills									
	Points	0–2	3–4	5–6	7–8									
	Independent research / knowledge acquisition	Insufficient self-directed learning and research skills	Sufficient self-directed learning and research skills	Satisfactory self-directed learning and research skills	Exemplary self-directed learning and research skills									
	Points	0–2	3–4	5–6	7–8									
Achievements	Quality of the written paper	Content requirements												
		Defined goal: achieved (see assignment sheet)			Structure: logical organization			Content: concise presentation without redundancies			Sources used: appropriate quality			
		no	partially	yes	no	partially	yes	no	partially	yes	no		partially	yes
		0	6	12	0	3	6	0	3	6	0		3	6
		Formal Requirements												
		Directories: complete (including table of contents notes)			Wording: precise; targeted use of technical vocabulary			Citation: formally correct & consistent in style			Formal aspects: in accordance with requirements (spelling, image quality, etc.)			
	no	partially	yes	no	partially	yes	no	partially	yes	no	partially	yes		
	0	2	4	0	2	4	0	2	4	0	2	4		
	Quality of the presentation	Content: logical structure; condensed to the essentials		Slide design: clear, appealing, relevant to the topic		Presentation: positive body language (gestures/facial expressions)		Speech: good pronunciation, intonation, pace, no speech quirks						
		no	partially	yes	no	partially	yes	no	partially	yes	no		partially	yes
0	4	8	0	3	6	0	3	6	0	3	6			
Total Points														

Student ID _____

Student's Name _____

100 – 85	84 – 70	69 – 55	54 – 40	39 – 0
Participated with excellent results	Participated with good results	Participated with satisfactory results	Participated with adequate results	Failed





Advisors use this form to assess whether a student has successfully participated in the project.
Both sides of this form must be given to the student during the feedback session.



University of Stuttgart

Project Assessment Form (2/2)
Feedback on Work Methods & Suggestions for Improvement

-
-
-
-
-
-
-
-
-
-

Student's Name

Student ID

Name of the Advisor

Project Number

Advisor's Signature

Date

Examiner's Signature

100 – 85	84 – 70	69 – 55	54 – 40	39 – 0
Participated with excellent results	Participated with good results	Participated with satisfactory results	Participated with adequate results	Failed

