

Universität Stuttgart

Guidelines for the writing of research projects at the IAT

BfS



Universität Stuttgart

Institut für Arbeitswissenschaft und
Technologiemanagement IAT

Guidelines for the writing of research projects

The following guidelines have been issued for the unified writing of research projects at the Institute of Human Factors and Technology Management (IAT) and the Fraunhofer Institute for Industrial Engineering (IAO). They are binding for students and their supervisors.

Status: December 2023

Content

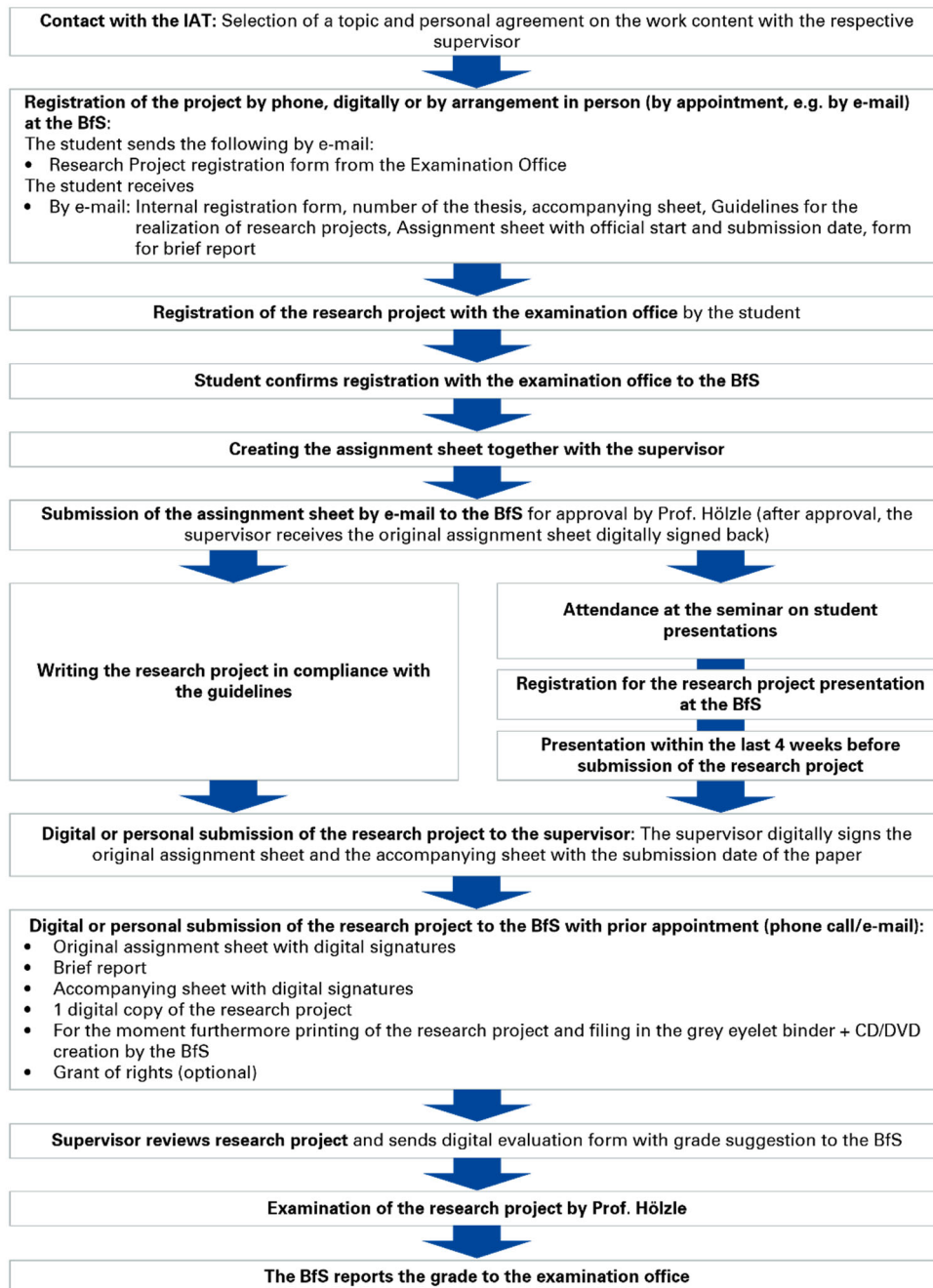
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For reasons of readability, masculine and feminine or diverse forms of language are not listed side by side in this guideline. All personal statements always apply to women, diverse persons as well as men.

1 Flowchart

In this chapter, the general processes for research projects are first visualized in the form of a flowchart. A more detailed explanation of the individual steps will follow in the next chapters.

Flowchart for the writing of research projects



2 Research Project Registration

2.1 Which research projects must be registered at the BfS?

All research projects carried out at or in cooperation with the IAT or IAO must be registered with the Office for Student Affairs (BfS). This includes research projects done by students of the University of Stuttgart as well as by students of other institutions (universities, universities of applied sciences, etc.). This is necessary because the BfS is responsible for recording and archiving all research projects done in-house.

2.2 What has to be considered regarding the registration at the BfS?

After the student has found a task at the institute and has agreed on a mutually binding work program with the respective supervisor, the research project must be registered at the BfS.

The registration of the research project is done in a digital-telephonic combination (telephone arrangement of the key data of the thesis and digital exchange of all related documents) or in person at the Office for Student Affairs by appointment.

Each work is assigned an identification number, which must be indicated on all relevant documents (sketch sheets, drawings, pictures, protocols, etc.).

Upon registration, the student will also receive an accompanying sheet documenting all necessary key data (topic, start and end dates, supervisor, etc.), which will remain with the student until submission. The templates for the other required forms, the assignment sheet and the short report, are sent to the student electronically after registration. The samples of all forms can be found at the end of this guideline (see page 26 ff).

The official start date for the research project is the date on the Exam registration!

The student and according supervisor jointly prepare the task sheet for the research project. This contains a detailed description of the work program or the task. It is to be submitted promptly by e-mail to the BfS for approval by Prof. Hölzle.

Only by an approved task order the research project is valid as officially supervised by the IAT!

The original of the digitally approved assignment is sent by the BfS to the supervisor by e-mail. When submitting the work, the supervisor notes the submission date on the task sheet and confirms this with digital signature. There must be **at least 3 months** between the start date on the task sheet and the submission of the research project!

The above regulations apply to all study programs of the University of Stuttgart supervised by the institutes, unless explicit attention is drawn to deviations in the following.

The procedure for work by students belonging to other institutions must be discussed with the BfS on a case-by-case basis.

In all cases, the provisions of the examination regulations for the corresponding course of study at the University of Stuttgart or the university (of applied science) at which the student is enrolled.

2.3 Degree programs of the Joint Commission Mechanical Engineering of Universität Stuttgart (GKM)

Degree programs:

Energy Engineering; Automotive Engineering; Mechanical Engineering; Mechanical Engineering/Microtechnology, Instrument Engineering and Technical Optics; Mechanical Engineering/Product Development and Design Engineering; Mechanical Engineering/Materials and Production Engineering; Mechatronics; Medical Engineering; Photonic Engineering; Technical Biology; Technical Cybernetics; Technology Management; Process Engineering

Processing time

The deadlines specified in the study and examination regulations apply to the processing time: Research projects are estimated to require 450 hours of work, to be completed within a period of 6 months.

If the time specified in the study and examination regulations is not sufficient to work on the given topic, the student is obliged to consult with the respective supervisor in due time. The reasons for the non-compliance with the processing time are to be explained to the supervisor. In justified cases, the supervisor may shorten the assignment. This must be communicated to the BfS. In addition, an extension of the processing time by a maximum of **3 months** can be requested from the responsible professor (Prof. Hölzle).

Registration

See chapter 2.1 and 2.2.

2.4 Other degree programs and external students

As a rule, the same regulations apply to the completion of research projects by students from other programs as apply to students of Technology Management or other Degree programs of the Joint Commission Mechanical Engineering of Universität Stuttgart (GKM).

As a rule, the research project must be approved by an institute of the respective faculty. For external students, the guidelines of the respective university apply. When registering, the student has to name his examiner, if necessary his second examiner. Without the specification of the examiner, the thesis cannot be registered at the BfS.

The first examiner is always a professor from the external university. Usually, Professor Hölzle acts as the respective second examiner for papers from other degree programs and external papers. For external students, Fraunhofer IAO can also act as a company. In this case, the first examiner only receives an expert opinion and grade proposal.

Processing time

The respective processing time for the corresponding research project in the degree program depends on the specifications set out in the corresponding study and examination regulations.

Regulations on extensions of the deadline are also noted in the corresponding study and examination regulations.

The BfS must be notified of any extensions of the deadline applied for.

Registration

See chapter 2.1 and 2.2.

2.5 External research projects

External research projects are papers which are written by students of the University of Stuttgart, but which are usually completely or partially initiated and/or completed externally. As a rule, these are theses assigned by companies. External research projects are **not** intended.

3 Writing, scope and submission of the research project

3.1 Writing of the research project

During the writing of the research project, the student is supervised by an academic employee of the institute. The supervisor's task is to introduce the student to the topic, to provide advice and support during the work, and to monitor the progress of the research project. This should always be done in the interest of both sides. A constant exchange of information between student and supervisor is recommended.

For experimental work, workstations are available in the experimental field and in the laboratories. The workstations at the institute can generally only be used during the presence of the supervisor or representative. Equipment and tools are provided by the supervisors in the workshops and laboratories.

Students can also lend media from the institute library during processing. To do so, they must register as a user with the library. The BfS is the contact for all formal questions concerning the research project.

3.2 Scope of research project

The research project in the master's degree program is an examination for the acquisition of 15 ECTS credits, which is either experimental, constructive or theoretical in nature and in the context of which the student has to work on a defined topic.

The student is expected to deal with the given topic in a structured, factual and technical manner and to present the results briefly and concisely in scientific formulation. The length of the paper should be within a range of approx. **60-80 pages** (at least 60 pages of continuous text without outline, appendix, etc.), whereby the exact formal requirements (except for the minimum number of pages) are always to be defined by the supervisor individually and on the basis of the assignment.

3.3 Research project submission

Upon submission, the supervisor checks the original copy (in the form requested by the supervisor), the electronic version (CD/DVD/USB stick) and the short report for form and completeness, always observing the formal structure and citation guidelines given in these guidelines. By **entering the submission date** and the **digital signature on the** original assignment sheet and on the accompanying sheet, the supervisor confirms the correct submission of the research project.

Attention: The research project will only be accepted if the BfS has a valid registration of the project at the examination office!

After that, the student arranges a digital-remote or personal submission of the work to the BfS with the following documents:

- **Original task sheet**
Digitally approved by Prof. Hölzle, dated and digitally signed by the supervisor.
- **Short report**
The short report should give an unbiased reader an overview of the content and results of the work (summary, no table of contents). The length of the short report should not exceed the **one-page** limit provided on the form.
- **Digital accompanying sheet**
In addition to some organizational data, the accompanying sheet contains a statement about the independent processing of the research project as well as the relief of the institute library. The signature of the library director certifies the return of all borrowed books and journals. The relief is required even if the institute library was not used.
- **Two copies of the work**
To be handed in at present is one electronic copy of the research project. For the time being, the BfS will continue to take care of the reproduction of the paper (grey eyelet half-folder - normally available free of charge at the BfS upon delivery) and the production of the electronic form on digital media (CD/DVD). We reserve the right to change this regulation introduced for the pandemic again in the foreseeable future.
- **Granting of rights (voluntary/ optional)**
See chapter 6 (page 23).

***Please submit all forms in digital version to the BfS by e-mail.
Only if all forms are present, the research project will be accepted.***

3.4 Issuance of certificates of achievement for research projects

When submitting the research project, students often request that a certificate of achievement (4.0 confirmation) be issued.

»4.0 Confirmation«

The BfS will only enter the application for the official "4.0 confirmation" in C@mpus for the student (vis-à-vis the Examination Office) under the following conditions:

- The student has handed in his research project at the BfS properly, i.e. with all required documents.
- The submitted research project is graded according to the supervisor with at least the grade 4.0 (sufficient).

- The supervisor requests a »4.0 confirmation« in the BfS with the following text:

Mr. cand. tema. / mach. **first name last name (matr. no.)**

has written his research project with the topic "XXX..."

submitted on the **date** and this is evaluated with at least the grade **4.0** (sufficient).
I hereby request that a »4.0 confirmation« be issued for the above named student should all other required criteria be met.

Name supervisor

- This request can also be made electronically to the BfS.
- The presentation for the research project was graded at least 4.0.

Based on this request, the BfS, with the approval of Prof. Hölzle, sends the application for the official »4.0 confirmation« to the examination office by entering it in C@mpus.

3.5 Presentation of the results of the research project

Part of the research project is a presentation of **20-22 minutes** about its content. The presentation is included with **20%** in the evaluation of the research project. The presentation should ideally take place within the last 4 weeks (of the 6-month processing period) before the research project is submitted to the BfS. However, registration for the presentation is only possible after the minimum processing time of the research project of 3 months has elapsed. For this purpose, the student arranges a date for the presentation by telephone or by e-mail at the BfS by selection from possible given date suggestions. The possible dates for the presentation are determined by the BfS and announced on the Internet.

The subject of the presentation should be an interesting excerpt from the research project. The presentation is to be given freely.

It is recommended to supplement the presentation by using technical aids (PowerPoint and illustrative material). The purpose of the presentation is to promote the ability to present findings gained from the research project in an interesting, clear and understandable way, as well as the student's rhetorical skills. Further written instructions for the preparation of the presentation are available at the BfS or on the IAT homepage.

4 Formal structure of the research project and instructions for scientific work

4.1 Structure of the research project

The work should be documented using a word processing system on paper in DIN-A-4 format. The following formal structure is desired (stapling order):

1. Title page
 2. Copy of the task sheet
(related sample can be found in the appendix to these guidelines).
-
3. Table of contents (outline)
 4. List of illustrations (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. Work text
*(Introduction, main part
[continuous chapters],
final consideration and conclusion)*
 9. Attachments
*(Tables and drawings that are not absolutely
necessary for explanation in the text section
are intended to be summarized here)*
 10. Bibliography (according to DIN ISO 690:2010)
 11. Declaration of independent editing and
the aids used.

*"I hereby certify that I have not used
any aids other than those specified to
complete the research project and that
I did not seek any outside assistance."
[date/signature].*
- ↑
continuous
Page numbering with
Arabic numerals
↓

4.2 Formatting

Regarding the formal structure and layout of the text, the following guidelines are authoritative.

Margins	Top: 2 cm, Right: 2 cm Bottom: 2.5 cm, Left: 4 cm
Fonts	Arial: 12pt Times New Roman: 12pt
Line spacing	1,5
Alignment	<ul style="list-style-type: none"> ▪ Justification ▪ Left-justified (flatsetting) <p>Hyphenation is recommended in both cases!</p>
Page numbers	<ul style="list-style-type: none"> ▪ Right-justified or centered ▪ Uniform in header or footer ▪ All directory pages are numbered using Roman numerals (usually in lower case: i, ii, iii, iv, ...). ▪ Starting from the first continuous text page, all the rest of the thesis is numbered using Arabic numerals, starting from 1.
Footnotes	<ul style="list-style-type: none"> ▪ Left-justified ▪ Separated from body text by horizontal line ▪ Font size: 10pt ▪ Line spacing within the footnote: 1 ▪ Line spacing between two footnotes: 1.5 <p><u>Alternative to footnotes:</u> Endnotes [= collection of footnotes at the end of a chapter or the paper].</p>
Headings	<ul style="list-style-type: none"> ▪ Of main sections are set off from the following text by 3 blank lines ▪ Of subsections are set off from the following text by 1 blank line
New paragraphs	<ul style="list-style-type: none"> ▪ Engage 5 strokes, or ▪ Separate from the next paragraph by a blank line ▪ Main paragraphs (chapters) should start on a new page
Quotes	<ul style="list-style-type: none"> ▪ As long as they are not longer than 3 lines: → integrate with quotation marks in the body text ▪ Longer quotations (> 3 lines) must be written with single line spacing and indented 5 keystrokes or separated from the body text by a blank line.

4.3 Components of a scientific paper

4.3.1 Title page

A title page must be prepared for the research project. It should contain the following information:

- Title of the research project, course of study, university and date of submission
- Full name of the author, matriculation number
- Examiner, supervisor and address of the institute

The title page should be designed in a uniform and harmonious way to match the overall appearance of the paper (for examples, see chapter 8 Forms). Due to the logo policy of the University of Stuttgart, the institute and university logos may only be used with the note »Submitted to the University of Stuttgart«. (see also here: [Logo-Policy](#)) External logos are not allowed on the research projects.

4.3.2 Table of contents

The outline must include all chapter and section headings with their full wording. A complete outline enables the author/student to show that he has understood the topic and the associated content and has paid attention to a logical structure when preparing the research project.

The extent to which a research project has a logical structure in terms of content can already be seen in part from its formal structure. This should be designed in such a way that it has both superordinate and subordinate topics. Equivalent topics are on the same level in terms of formal structure. It also follows that there must automatically be a chapter 2 as soon as there is a chapter 1, and that a bullet point 2.1 may only exist if it is also followed by a section 2.2. It is not permissible for only one subitem to be listed per level (2., 2.1, 3.). As a rule, each chapter has at least two subchapters (see also example 1 or 2 on p. 14).

In addition to the individual section titles, the table of contents always includes references to the list of abbreviations, list of illustrations and bibliography. If necessary, a list of tables and symbols should also be included.

When structuring the table of contents, the page numbers of the table of contents, as well as those of the list of abbreviations, list of illustrations and list of tables are given in small Roman numerals (example: »I Table of Contents« on page »i«, see also both possible variants on p. 14). However, Arabic numerals are assigned consecutively to the individual chapters of the continuous text as well as the appendix and the bibliography. If the headings of the directories and chapters have been formatted using templates and the page numbers there are already formatted correctly, they will be adopted in this way when the table of contents is automatically generated.

Variante 1 (arrangement with indentations)

I	Table of Contents	i
II	List of illustrations.....	ii
1	Introduction	1
1.1	Initial situation	1
1.2	Project implementation	1
[...]		
2	Fundamentals of Technology Management.....	7
2.1	8
2.1.1	Purpose and objective	8
2.1.2	Design of standards	8

Variante 2 (arrangement with alignment line)

I	Table of	i
II	List of illustrations.....	ii
1	Introduction	1
1.1	Historical.....	2
1.2	The German body of standards	4
1.2.1	German Standards Committee	5
1.2.2	Name DIN, association mark DIN	5
1.2.3	Contents of DIN standards	6
[...]		
1.3	International standardization	9
1.4	Standardization technology	10
1.4.1	Purpose and objective	12
1.4.2	Design of standards	12

4.3.3 List of illustrations and tables

All illustrations and tables contained in the research project are to be listed in a separate list of illustrations and tables, indicating their number, title and page number.

The images, diagrams and tables contained in the text section are all numbered consecutively in Arabic, as are the images, diagrams and tables that have been separated out into the appendix. Images and diagrams are equally listed in the list of illustrations, while tables are listed in the list of tables.

For the preparation of technical drawings, the relevant DIN regulations must be observed.

4.3.4 List of abbreviations and symbols

All abbreviations used in the context of the research project must be listed and defined in alphabetical order in a list of abbreviations to be prepared specifically for this purpose, with the abbreviations on the left and the associated explanations on the right side.

In principle, abbreviations should be used as sparingly as possible. Apart from a few exceptions, such as »etc.« or »e.g.« and those for currencies (€, \$), their use should be limited to abbreviations common in the respective technical jargon, as well as to titles / names of (technical) journals (e&i, faz, etc.), institutions (EU, GATT) or companies (BASF, SAP).

If the research project contains formulas with (mathematical) symbols, an alphabetically sorted list of symbols must also be provided.

4.3.5 Text of the research project

4.3.5.1 Language and style

The research project should be formulated independently by each student, whereby care must be taken that it is coherent in terms of content and that it provides the reader with the easiest possible access to the subject matter. Among other things, a grammatically correct sentence structure, the definition of the terms used as well as an always purpose-oriented use of specific technical vocabulary are conducive to this goal. Furthermore, it should be noted that the work must be written in **present tense**.

4.3.5.2 Structure

In every scientific paper, the actual (flowing) text is divided into three central elements: *introduction*, *main body* and *conclusion*.

The subject of the *introduction* is the description of the task/problem, as well as the (justification for the) content-related delimitation to neighboring topics. In addition, the introduction should provide the content structure of the work as well as the procedure.

The *main part* of the research project serves the author / student of the intensive discussion of the previously delimited topic analogous to the process outlined in the table of contents.

In the *final part (conclusion)* of the research project, the results obtained in the main part are presented in a condensed form. Furthermore, the conclusion can be used by the students to evaluate the results of the work and to give an outlook on further research needs in connection with the topic worked on.

Also note that in a scientific paper, no chapter or subchapter exists without associated text. For example, a text under »4.3.5 Text of the thesis« (see above) would be mandatory.

4.3.6 Appendix

The appendix of a scientific research project functions as a possibility for an author to document his elaborated results. Therefore, all the material that is referred to in the thesis is generally placed in the appendix. This includes, for example, diagrams, statistics, measurement protocols, (extensive) mathematical proofs or also interview protocols, as well as printouts from the Internet.

Sources that are not generally accessible or unpublished must also be included in the appendix unless there are legal reasons to the contrary. In these cases, such sources should generally be avoided and their inclusion in the flowing text should also be dispensed with.

On the other hand, all content that is important for understanding the text should be included in the flowing text, not in the appendix.

4.3.7 Bibliography

The bibliography contains a complete and alphabetically sorted collection of all sources cited in the context of the research project. At this point, it should be noted that quotations from Wikipedia or other encyclopedias should be avoided.

How the sources are to be indicated in the bibliography in detail is described in the DIN ISO 690:2010 »Information and documentation - Guidelines for title information and citation of information resources«. The most important rules anchored therein are listed below with associated examples. The ISBN and/or DOI are not mentioned.

Rules and related examples (adapted to a possible use of Citavi as literature management):

Monographs / Reference books

<i>All authors (1st; 2nd; etc.):</i>	<i>Title of the Book.</i>	<i>Edition description. (if available)</i>	<i>Place(s) of publication:</i>	<i>Publisher,</i>	<i>Year</i>
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Spath, Dieter; Linder, Christian; Seidenstricker, Sven: Technologiemanagement. Stuttgart: Fraunhofer Verlag, 2011

Monograph: Editorial work with multiple authors

<i>Publisher:</i>	<i>Title of the Book.</i>	<i>Edition description. (if available)</i>	<i>Place(s) of publication:</i>	<i>Publisher,</i>	<i>Year</i>
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Bullinger, Hans-Jörg (ed.) et al: Neue Organisationsformen im Unternehmen. 2nd, newly edited and expanded ed. Berlin: Springer, 2003

Dissertation; university edition

Author:	Dissertation title.	Location,	University,	Dissertation note,	Year
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Langlotz, Martin: Konzept zur Unterstützung von Entscheidungsprozessen in der Produktentwicklung. Kaiserslautern, Techn. Univ., Diss., 2011

Dissertation, also published by the publisher

Author:	Dissertation title.	Place of publication:	Publisher,	Year.	Authorized:	Location,	University,	Dissertation note,	Year
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Schnabel, Ulrich: Management des intellektuellen Kapitals wissensintensiver Dienstleister. Wiesbaden: Springer Gabler, 2013. Authorized: Stuttgart, Univ., Diss., 2013.

Conference (not published by the publisher):

Conference title:	Subtitle.	Time and location of the conference.	Location: Publisher / Organizer,	Year
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Produktionsunternehmen wettbewerbsfähig organisieren: Conference. 09.07.2004, Stuttgart. Stuttgart: Fraunhofer-Institut für Arbeitswirtschaft und Organisation, 2004.

Conference proceedings (volume as publisher's publication):

Publisher (person or institution):	Conference title:	Subtitle.	Time and location of the conference.	Place of publication:	Publisher,	Year
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Dieter Spath (Ed.): Business Development durch Corporate Venturing: Innovative Ansätze und Methoden zur Geschäftsentwicklung, Forum Innovationsmanagement 2004. July 2004, Stuttgart. Stuttgart: Fraunhofer IRB-Verlag, 2004

Essay in monographs

All authors (1st; 2nd; etc.):	Essay title.	In: Author or ed. (if available): Title of the Monograph.	Location:	Publisher,	Year,	Page-reference
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Schimpf, Sven; Heubach, Daniel; Rummel, Silvia: Technologieentwicklung als Innovationstreiber in bestehenden und disruptiven Märkten – von der Beobachtung zur Umsetzung. In: Thomas Abele (Ed.): Die frühe Phase des Innovationsprozesses. Wiesbaden: Springer Gabler, 2016, pp. 31-49.

Essay in journals

All authors (1st; 2nd; etc.):	Essay title.	In: Title of the journal Vintage (year)	Issue no,	Page reference
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Spath, Dieter; Schnabel, Ulrich: *Das Intellectual Capital Management Toolset: Erfolgsfaktoren und Metrics zur Steuerung des intellektuellen Kapitals*. In: *Personalführung* 38 (2005) No. 4, pp. 30-40.

Essay in a conference proceedings:

All authors (1st; 2nd; etc.):	Essay title.	In: Publisher (if available): Title of the proceedings:	Sub- title.	Time and loca- tion of the con- ference.	Lo- ca- tion:	Publisher,	Year,	Page refe- rence
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Bauer, Wilhelm; Vocke, Christian: *Implications of sedentary lifestyle for designing dynamic work in times of digital selfness*. In: Ravindra Goonetilleke (Ed.) et al: *Advances in Physical Ergonomics and Human Factors: Proceedings of the AHFE 2016 International Conference on Physical Ergonomics and Human Factors*. July 27-31, 2016, Walt Disney World, Florida, USA. Cham [et al:] Springer, 2016, pp. 675-685.

Essay in a loose-leaf edition

All authors (1st; 2nd; etc.):	Essay title.	In: Publisher (if available): Title of the Loose-leaf edition:	Subtitle.	Loca- tion:	Publis- her,	Year,	Page or section num- ber. (Loose-leaf edition)
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Heubach, Daniel; Beucker, Severin; Lang, Claus: *Einsatz von Software Tools im betrieblichen Umweltschutz: Software-Unterstützung in Produktentwicklung und Produktion*. In: Herbert Birkhofer (Ed.) u.a.: *Umweltgerechte Produktentwicklung: ein Leitfaden für Entwicklung und Konstruktion*. Berlin: Beuth, 2000, Chap. 3.4.1.17 (loose-leaf edition).

Norm

Formal indication »Standard« designation num- ber part.	Issue Date.	Standard title
--	-------------	----------------

Standard DIN ISO 690. 2013-10. *Information und Dokumentation – Richtlinien für Titelangaben und Zitierung von Informationsressourcen*

Electronic source/Internet

Author, publisher or institution:	Title.	[medium name].	Date of creation of the document.	[Accessed on: dd.mm.yyyy].	Available at: URL
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Institut für Arbeitswissenschaft und Technologiemanagement (IAT): Homepage. [Online] © 2023. [Accessed 01 July 2023]. Available from: <https://www.iat.uni-stuttgart.de>

Patents (applicant & inventor are identical)

<i>Name of the patent owner/applicant:</i>	<i>Title of the Patent-resource.</i>	<i>Name of the inventor (not applicable).</i>	<i>Publication date</i>	<i>Registration Date.</i>	<i>Country name/code</i>	<i>Official name of the patent family (main resource)</i>
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Honda Motor Ltd: Sitzkonstruktion für ein Motorrad. 10.05.2007. Application: 19.05.2004. DE, patent specification DE602004003996T2.

Patents (applicant & inventor are different)

<i>Name of the patent owner/applicant:</i>	<i>Title of the Patent-resource.</i>	<i>Name of the inventor.</i>	<i>Publication date</i>	<i>Registration date.</i>	<i>Country name/code,</i>	<i>Official name of the patent family (main resource)</i>
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Honda Motor Ltd: Sitzkonstruktion für ein Motorrad. Inventor: Yutaka Murata; Masao Ogawa. 10.05.2007. Application: 19.05.2004. DE, patent specification DE602004003996T2.

On the IAT homepage you can download a citation style (Harvard Style + Chicago Style) created for Citavi (for Windows users) with comments. Following the discontinuation of student licenses for Citavi Web, there is currently no citation style available for download for alternative reference management programs such as Zotero (open-source, cross-platform software).

4.4 Quotations

4.4.1 Types of quotations

4.4.1.1 Literal quotations

We always speak of literal quotations when you take over parts of sentences or whole sentences from a text source word for word (= true to original) into your own work. Literal quotations should only be used if both their content and their wording are significant in themselves and fit into the context of the research project.

Furthermore, when quoting literally, it must be ensured that the quoted text passage is not taken out of context and is not given a meaning other than that intended by the original author by inserting it into the author's own work. These criteria are met, for example, for the definitions of terms used in the research project.

If one of these criteria is not met, the summary of the text passage in one's own words (= indirect quotation) is preferable to the literal quotation.

In the case of literal quotations, it is possible to add one's own formulations to the quotation. This is usually used when the person quoting wants to emphasize certain contents of the original quotation. Own additions are always emphasized by square brackets and provided with a reference, such as *addition of the author* or the *abbreviation of the author*.

If a certain part of a quotation is to be deliberately omitted, the omitted part of the text is represented by 3 dots in a square bracket as follows: [...]. Omissions serve to reduce the original text part to its essential statement and not to change the original text intention.

Literal quotations are identified as such in the continuous text by placing double quotation marks ("quoted text").

Ex: "A fundamental observation for innovation research is that even different technologies often develop according to similar temporal patterns." (Knaf, H./ Heubach, D. 2008, p. 147)

4.4.1.2 Meaningful quotes

Quotations according to the sense of the text are the rule in scientific work, since in this case foreign thoughts are reproduced by means of independent formulations coherent with the content of the original text. When quoting according to meaning, care must be taken to reproduce the content in the subjunctive. The subjunctive has the function of clearly distinguishing secondary quotations from the author's own statements.

Even with this type of quotation, care must be taken to name the source texts accurately.

Ex: For the design of cost accounting in the R&D area, it does not matter whether the projects are internal or external to the company. Basically, the planning and control of the project process and the costs are similar. (cf. Schäfer, K., 1984)

4.4.1.3 Secondary quotes

Secondary quotations are quotations that originally come from texts by an author 1, to which an author 2 refers in his writings, and where the student does not refer to the original text by author 1 in his work, but to the already quoted text by author 2.

These secondary quotations are to be avoided as a matter of principle, because it cannot be assumed in every case that author 2 has correctly reproduced the content of the original author 1 when quoting. It is therefore expressly recommended to read a text that is to be quoted in its original and not to rely on foreign quotations from other authors.

However, if the original literature is not accessible, a secondary quotation should be identified by the notation "quoted from...".

4.4.1.4 Quotation

In general, it should be emphasized at this point that all quotations, regardless of their nature, must be accompanied by references in order to ensure **the verifiability** of the statements made.

In addition, references serve to identify foreign statements as such and to distinguish them from one's own in this way. On the one hand, this acknowledges the ideas of the person quoted and, on the other hand, ensures that the person quoting (student) cannot be accused of attempted deception in the sense of intellectual theft (plagiarism).

In principle, all publicly accessible works are considered to be quotable sources. If an author wishes to refer to works that are not publicly accessible, he must first obtain the permission of the responsible persons / institutions.

4.4.2 Quotation techniques

Each source reference should provide the reader with the opportunity to read the quotation used in the original context.

As far as the integration of the references into the text is concerned, the author has the possibility to choose between the two variants listed below and usually used in scientific papers:

1.) **Harvard Style** (= *American Short Quotation Style*)

In this case, the person quoting (student) includes the source reference in the flowing text directly following the quotation in the following manner:

"Quotation" (*author, year of publication, page number*)

2.) **Chicago Style** (= *Outsourcing of references to footnotes*)

In this quotation technique, there is a superscript number at the end of the quotation that references a footnote at the bottom of the page where the source quotation is located.

Both quotation techniques on their own are permissible in scientific work but must not be mixed within a thesis. Therefore, the importance of deciding on **ONE** of the two quotation techniques **BEFORE** starting the bachelor thesis and to keep it consistently until the end of the thesis should be emphasized at this point.

If a source is quoted that was written by **TWO** authors, then both last names of the authors must be listed and separated from each other by a diagonal line.

If the number of authors is three or more, only the first author should be named, and the others subsumed under the suffix »et al.«. However, this only applies to references in the flowing text and footnotes; references in the bibliography must be made by naming all authors.

If one has several equally relevant sources for a certain statement/topic, these may be quoted in their entirety in both above-mentioned quotation techniques, in which case the various sources are to be separated from each other by semicolons.

**It is advisable to clarify the quotation method with the supervisor(s) in advance.
In general, the rules of the respective course of study or the university apply.**

4.5 Guidelines for creating images

Decisive for the use of an image, a graphic or a table is a high information content as well as a good presentation quality. Ideally, different content should not be integrated into *one* graphic or table. In this case, use a series of images to illustrate a change or similar. Reproduced images from other sources should be of very good quality and not based on a dark background.

Bold fonts are particularly suitable for labeling graphics. Within a graphic, the number of different fonts and font variants used (**bold**, *italic*, underlined, etc.) should be limited to a maximum of three. In addition, it is recommended to consistently maintain labeling standards in all graphics of a work (e.g., always use italic font for labeling axes, etc.). More than three lines of text in a graphic should therefore be avoided. More extensive information belongs in the text part and not in a graphic.

For the arrangement of the typeface, it should also be remembered that right-justified and centered type is difficult for the reader to grasp. Likewise, the vertical arrangement of contiguous letters is not suitable. Such design elements require extensive experience and should therefore only be used in special cases.

These suggestions are not binding, but their application facilitates the readability and comprehensibility of graphics. In any case, care should be taken to ensure that all graphics within a paper are always produced according to the same scheme. Experience has shown that when preparing a series of images, the most extensive graphic should be used first. Here, the maximum possible font size can be determined, to which all other images of the research project can be aligned.

4.6 Concluding remarks

The above rules are not the only ones in existence and are therefore not binding in every detail. However, it is recommended to follow the DIN standards.

In principle, there are various permissible ways to structure the text section and bibliography. The rules often differ in the various disciplines and language areas. All research projects written at the Institute of Human Factors and Technology Management must be based on the regulations listed above.

5 Legal relations

Research projects are issued, supervised and examined by a university professor, university lecturer or private lecturer furthermore any scientific employee to whom the examination authority has been assigned in accordance with the legal provisions. If necessary, a thesis may be examined by further reviewers.

The basis for the execution of research projects are the determinations of the respective examination regulations of the University of Stuttgart. Deviations from these determinations - if permissible - are to be **fixed in writing before starting the research project**.

The student is bound to secrecy about all documents and communications received in the course of his research project.

Correspondence of the student with third parties, as far as it concerns the content of the research project, has to be agreed upon with the supervisor beforehand.

These guidelines also apply if, at the instigation of the Institute, the student works directly or indirectly for third parties to whom the performance of a task has been transferred in whole or in part.

A research project without submission of the written elaboration to the examiner does not need to be recognized and graded. This also applies to research projects that have not been registered or have been registered late at the examination office!

**In all cases, the provisions of the examination regulations
for the corresponding study program apply!**

6 Grant of rights

Copyright law requires the student to grant rights for free of charge, time and space-unlimited use (simple right of use in comparison to exclusive right of use) of the work results created as part of the research project for research, teaching and study, as well as for publication in the institute library. This granting of rights is voluntary and must be signed and submitted to the BfS with the corresponding form (see Forms, p. 32) upon submission of the research project.

Please note that if the research project is not published, it is not eligible for quotation.

It is advisable to clarify the grant of rights in advance with the supervisor of the research project.

7 Use of ChatGPT in the context of the research project

Currently, a handout on the topic of ChatGPT in university teaching is being created, which will be binding for you as a student, as well as for all supervisors of any student theses. Keep this in mind when writing your research project and using ChatGPT. In addition, we would like to point out at this place that you will have to submit a declaration of independence at the end of the research project. The use of ChatGPT without identification contradicts this declaration of independence.

8 Forms

The following pages list the forms (only available in German) required for the research project as well as sample cover sheets created based on the logo policy of the University of Stuttgart:

- Internal registration of a research project
- Assignment sheet for research project
- Brief report for research project
- Accompanying sheet for research project
- Assessment sheet for research project
- Example Cover sheet with logo
- Example Cover page without logo
- Rights granting form

These sheets are for information only!
The originals are issued exclusively by the BfS!

Forschungsarbeit im M.Sc. Anmeldung



Universität Stuttgart
Institut für Arbeitswissenschaft und
Technologiemanagement IAT

Studienarbeit im M.Sc. Nr.: F _____

Name: _____	Vorname: _____
Geb.-Datum: _____	Fachrichtung: _____
Matrikelnr.: _____	

Anschrift:
Straße, Hausnummer: _____
PLZ, Ort: _____
Telefon: _____ E-Mail: _____

Betreuer der Arbeit (Kz./Gruppe): _____ / _____ Starttermin: _____
Telefon des Betreuers: _____ Art der Arbeit: experimentell
Thema der Arbeit: _____ konstruktiv
_____ theoretisch

Erklärung:
Hiermit bestätige ich die Richtigkeit meiner Angaben. **Außerdem habe ich mich über die am IAT geltenden Richtlinien zur Durchführung von Forschungsarbeiten* informiert.** Die Rechtsverhältnisse erkenne ich an. Die o.g. personenbezogenen Daten werden entsprechend §125a Abs. 1 Satz 2 UG in Verb. mit den §§1 und 9 Verordnung des Wirtschaftsministeriums zur Erhebung und Verbreitung personenbezogener Daten zum Zwecke der Durchführung und Bewertung von Forschungsarbeiten verarbeitet.
Ich bin darauf hingewiesen worden, dass ich meine Forschungsarbeit unverzüglich am Prüfungsamt anmelden muss. Als offizieller Starttermin gilt der auf dem Anmeldebogen zur Forschungsarbeit (Prüfungsamt+Institut) unter »Datum der Vergabe des Themas« festgehaltene Termin!

* Richtlinien sind im BfS erhältlich Datum und Unterschrift des Studierenden

Anmeldung am PA ist erfolgt!

Vorträge gehört!

**AUFGABENSTELLUNG zur
Forschungsarbeit im M.Sc.**



Universität Stuttgart
Institut für Arbeitswissenschaft und
Technologiemanagement IAT

für Max Mustermann
Matr.-Nr.: 1234567
Studiengang: tema

Thema:
(dt. & engl.!)



Nr. der Arbeit: F 14xx

Genehmigt: _____
(Unterschrift Prüfer/in)

Durchgeführt am: Institut für Arbeitswissenschaft und Technologiemanagement

Betreut von: xxxx/xxxxx

Starttermin: xx.xx.22

Abgabedatum: xx.xx.22

Abgabe am: _____ , _____
(Unterschrift Betreuer/in)

**KURZBERICHT zur
Forschungsarbeit im M.Sc.**



Universität Stuttgart
Institut für Arbeitswissenschaft und
Technologiemanagement IAT

Name:	Max Mustermann
Betreuer/Gruppe:	xxxx/xxxxx
Abgabedatum:	xx.xx.22

Nummer der Arbeit:
<u>F 000x</u>

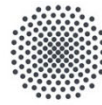
Thema: Klicken oder tippen Sie hier, um Text einzugeben.
--

Stichworte: Klicken oder tippen Sie hier, um Text einzugeben. <input type="text"/> Klicken oder tippen Sie hier, um Text einzugeben. <input type="text"/> Klicken oder tippen Sie hier, um Text einzugeben. <input type="text"/> Klicken oder tippen Sie hier, um Text einzugeben. <input type="text"/>

Inhaltsangabe: Klicken oder tippen Sie hier, um Text einzugeben.
--



BEGLEITBOGEN für
Forschungsarbeit im M.Sc.



Universität Stuttgart
 Institut für Arbeitswissenschaft und
 Technologiemanagement IAT

Nummer der Arbeit:

Bitte vor Beginn der Arbeit ausfüllen!

Zugehörige Daten:

Name	Vorname	Matrikelnummer	Universität Stuttgart <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	Andere Hochschule <input type="checkbox"/>
	Beginn	Ende	Studiengang
Bearbeitungszeitraum:	<input type="text"/>	<input type="text"/>	<input type="text"/>

Thema der Arbeit (dt. & engl.):

Betreuer/in der Arbeit:

Bitte nach Abschluss der Arbeit ausfüllen!

Einzuholende Unterschriften vor Abgabe im BfS:

Erklärung: Ich versichere hiermit, dass ich in der Arbeit keine anderes als die angegebenen Hilfsmittel benutzt und keine fremde Hilfe in Anspruch genommen habe.

Art der Arbeit: theor.
 konstr.
 exper.

Abgabebestätigung bitte auch auf Aufgabenstellung unterschreiben!

Datum Unterschrift Studierende/r

Datum Unterschrift Betreuer/in

Entlastung der Bibliothek

Datum Unterschrift Bibliothek

Die/der Studierende hat keine Bücher mehr entliehen!

Zu erledigende Aufgaben vor Abgabe im BfS:

- Abgabebestätigung per Unterschrift auf Original-Aufgabenblatt einholen:
- Kurzbericht zur Arbeit erstellen:
- Eidesstattliche Erklärung in der Arbeit unterschreiben:
- Sperrvermerk ja: nein:
- Rechteeinräumung ja: nein:

Beurteilungsbogen für Forschungsarbeiten im M.Sc.



Universität Stuttgart
Institut für Arbeitswissenschaft und
Technologiemanagement IAT

Beurteilungskriterien	Stufe 1 (mangelh.)	Stufe 2 (ausr.)	Stufe 3 (befr.)	Stufe 4 (gut)	Stufe 5 (sehr gut)	Punkte
Inhaltliche Bewertung (73,33 %)						
<i>Aufgabenstellung</i>	0	2	4	6	8	0
<i>Thematische Eingrenzung</i>	0	2	4	6	8	0
<i>Methodik</i>	0	4	8	12	16	0
<i>Lösungsweg</i>	0	4	8	12	16	0
<i>Selbständigkeit der Bearbeitung</i>	0	4	8	12	16	0
<i>Gliederung</i>	0	2	4	6	8	0
<i>Literatur- und Materialbearbeitung</i>	0	4	8	12	16	0
Formale Bewertung (26,67 %)						
<i>Gliederung + Verzeichnisse</i>	0	1	2	3	4	0
<i>Gestaltung und Inhalt</i>	0	1	2	3	4	0
<i>Zitierweise</i>	0	2	4	6	8	0
<i>Sprache</i>	0	2	4	6	8	0
<i>Fristen</i>	0	2	4	6	8	0



Gesamtpunktzahl: **0**

Notenvorschlag (80 %): **0**

Vortragsnote (20 %): **0**

Endnote (Drittelnote): 0

Name des Studierenden: _____

Matrikel-Nr. des Studierenden: _____

Lfd. Nr. der Arbeit: _____

Betreuer / OE: _____

Abgabedatum: _____

Unterschrift Betreuer/in: _____

Korrekturdatum: _____

Unterschrift Prüfer/in: _____

120-118	117-115	114-112	111-109	108-106	105-103	102-100	99-97	96-94	93-91	90-88	87-85	84-82	81-79	78-76	75-73	72-70
1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5	2,6
69-67	66-64	63-61	60-58	57-55	54-52	51-49	48-46	45-43	42-40	39-37	36-34	33-31	30-28	27-0		
2,7	2,8	2,9	3,0	3,1	3,2	3,3	3,4	3,5	3,6	3,7	3,8	3,9	4,0	5,0		



Universität Stuttgart
Institut für Arbeitswissenschaft und
Technologiemanagement IAT

RESEARCH PROJECT

TITLE (English)
TITLE (German)



submitted on
Institute for Human Factors and Technology Management (IAT)
of the University of Stuttgart

From: Max Mustermann
Mat-No.: 1234567
Mustermannstr. XY
99999 Musterstadt

Examiner: Univ.-Prof. Dr. rer. oec. habil. Katharina Hölzle, MBA

Supervisor: Titel + Name

Submission Date: Date. Month Year (01. April 2023)

Address of the institute: IAT Universität Stuttgart, Nobelstr. 12, 70569 Stuttgart

RESEARCH PROJECT

TITLE (English)
TITLE (German)

submitted on
Institute for Human Factors and Technology Management (IAT)
of the University Stuttgart

SAMPLE

From: Max Mustermann
Mat-No.: 1234567
Mustermannstr. XY
99999 Musterstadt

Examiner: Univ.-Prof. Dr. rer. oec. habil. Katharina Hölzle, MBA

Supervisor: Titel + Name

Submission Date: Date. Month Year (01. April 2023)

Address of the institute: IAT Universität Stuttgart, Nobelstr. 12, 70569 Stuttgart

Rights granting form



Einräumung von Nutzungsrechten an einer Forschungsarbeit im M.Sc. für Zwecke der Forschung, der Lehre, des Studiums und der Bibliothek

Hiermit übertrage ich, [Vorname, Name, Anschrift], der Universität Stuttgart, dem Institut für Arbeitswissenschaft und Technologiemanagement IAT, und dem Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO das Eigentum an einem von mir der Bibliothek der beiden genannten Institute kostenlos zur Verfügung gestellten Exemplars meiner Forschungsarbeit mit dem Titel

[Titel der Arbeit]

und räume der Universität Stuttgart, dem Institut für Arbeitswissenschaft und Technologiemanagement IAT, und dem Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO an dieser Arbeit und den im Rahmen dieser Arbeit entstandenen Arbeitsergebnissen ein kostenloses, zeitlich und räumlich unbeschränktes, einfaches Nutzungsrecht für Zwecke der Forschung, der Lehre, des Studiums und der Nutzung der Arbeit für Zwecke der Institutsbibliothek ein. Falls im Zusammenhang mit der Arbeit Nutzungsrechtsvereinbarungen der Institute mit Dritten bestehen, gelten diese Vereinbarungen auch für die im Rahmen dieser Arbeit entstandenen Arbeitsergebnisse.

Ich erkläre, die Arbeit selbstständig verfasst und bei der Erstellung dieser Arbeit die einschlägigen Bestimmungen, insbesondere zum Urheberrechtsschutz fremder Beiträge, eingehalten zu haben. Soweit meine Arbeit fremde Beiträge (z.B. Bilder, Zeichnungen, Textpassagen) enthält, erkläre ich, dass diese Beiträge als solche gekennzeichnet sind (z.B. Zitat, Quelle Angabe) und ich eventuell erforderlich gewordene Zustimmungen der Urheber zur Nutzung dieser Beiträge in meiner Arbeit eingeholt habe. Für den Fall der Verletzung Rechte Dritter durch meine Arbeit, erkläre ich mich bereit, der Universität Stuttgart, dem Institut für Arbeitswissenschaft und Technologiemanagement IAT, und dem Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO einen daraus entstehenden Schaden zu ersetzen bzw. die Universität Stuttgart, dem Institut für Arbeitswissenschaft und Technologiemanagement IAT, und das Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO auf deren Aufforderung von eventuellen Ansprüchen Dritter freizustellen.

Mir ist bekannt, dass die Erfassung meiner Arbeit im Online-Katalog der Bibliothek eine dauerhafte, weltweite Sichtbarkeit der bibliografischen Daten der Arbeit (Titel, Autor, Erscheinungsjahr, etc.) bedeutet.

.....
[Ort, Datum, Unterschrift]

9 Important contact details

Office for Student Affairs (BfS)

Contact person: Mrs. D. Pohl

Management Mr. Dipl.-Kfm. t.o. Oliver Rüssel

Opening hours: Tuesday and Thursday from 9:00 a.m. – 12:00 p.m.
(by phone or digitally, in person by appointment).

Location: IAT, Nobelstr. 12, 70569 Stuttgart, Building G, Room G 022
(basement floor)

Tel./Fax: 0711/970-2061 / -2299

E-mail: bfs@iat.uni-stuttgart.de

Internet: [BfS - Office for Student Affairs](#)

Fraunhofer IAO Departmental Library

Opening hours: Monday, Tuesday and Thursday from 10:00 a.m. – 4:00 p.m.

Location: IAT, Nobelstr. 12, 70569 Stuttgart, Building G, Room G 205
(Level 2)

Tel: 0711/970-2187

E-mail: bibliothek@iao.fraunhofer.de

Internet: [IAO Departmental Library](#)
(Fraunhofer IAO Intranet)

Examination Office University of Stuttgart

Opening hours: Wednesday, 1:00 p.m. - 3:30 p.m.
Thursday, 9:00 a.m. - 12:00 p.m.

Location: Vaihingen University Area
House of Students
Pfaffenwaldring 5 c // 3rd floor
70569 Stuttgart

Online-
Office hours: Monday, 1:30 p.m. - 2:30 p.m.
Friday, 10:00 a.m. - 11:00 a.m.

Tel: Outside of in-person office hours and online office hours.

Internet: [Study Services and Examination Office](#)

Examination Office University of Hohenheim

Opening hours: Monday, Wednesday and Friday, 10:00 a.m. - 11:00 a.m.
Tuesday and Thursday, 2:30 p.m. - 3:30 p.m.
Office hours are held at the Student Information Center.

Location: University of Hohenheim
Department of Student Affairs
Examination Office Economics
Schloss Mittelbau, Ground floor, Room 035
70599 Stuttgart

Contact person: Mrs. Kirschner
Mrs. Mack
Mrs. Renner
Mrs. Schard
Mrs. von Bassewitz

Fax: 0711/459-24211

E-mail: pa-wiwi@verwaltung.uni-hohenheim.de

Internet: [Examination Office University of Hohenheim](#)